

A NEW SHIFT? MATERNAL IMPLICIT AND EXPLICIT MENTALIZING IN
PARENT-INFANT PSYCHOTHERAPY: A MIXED-METHODS DESIGN

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ABSTRACT

Mentalizing refers to a capacity to think about others or oneself in terms of intentional mental states (e.g. beliefs, desires, feelings). Mentalizing is particularly important in the early parent-infant relationship as it is thought to be the process underlying sensitive parenting and the foundation for healthy relationships. To date, parental mentalizing has predominately been measured through how the parent *explicitly* reflects on their infant's internal experiences. In contrast, Parental Embodied Mentalizing (PEM) assesses the *implicit*, nonverbal bodily-based behavioural interaction between parent and infant. As mentalizing is considered a multidimensional construct, it is valuable to examine how explicit and implicit processes shape the quality of the caregiving relationship.

The current study aimed to investigate how mentalizing capacity is affected in families with difficulties in the parent-infant relationship. The purpose of the research was to use a mixed-methods designed to: 1) evaluate the effectiveness of parent-infant psychotherapy at enhancing PEM; 2) examine PEM and its associations with parental representations, infant attachment, maternal mental health, infant development and parent-infant interactions; and 3) conduct Thematic Analysis (TA) to investigate the elements of change in implicit and explicit parental mentalizing during early caregiving. This research intended to produce findings that could contribute to advancing clinical interventions aimed at fostering positive relationships with parents and their infants.

In the current study, PEM was coded on data from a study in which mothers with mental health problems and their young infants (<12 months) had been randomly allocated to parent-infant psychotherapy ($n = 34$) or treatment as usual ($n = 31$). The current project's quantitative findings revealed that PEM significantly improved over a 12-month period in both conditions (parent-infant psychotherapy and treatment as usual). PEM was significantly associated with maternal mental health, and parent-infant

interactions, but was not associated with parental representations, infant attachment or infant development. TA investigated the processes of change in implicit and explicit mentalizing over the course of a year and produced two main themes: “From Turbulence to Synchronicity” and “The Outside World and Transformations”. Analysis revealed that when change occurred, the relationship between parent and infant was transformed towards synchronicity within the dyad and towards resolution and re-engaging with the world outside the dyad.

Findings suggest that clinical interventions could benefit from integrating embodied and reflective processes into the therapeutic process to increase parental mentalizing and enhance the wellbeing of infants and their families.

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INTRODUCTION

Infants are entirely dependent on those who care for them to provide a safe environment that nurtures their physical and emotional wellbeing. According to attachment theory, the quality of early caregiving goes onto shape experiences across the lifetime (Bowlby, 1969). Indeed, longitudinal research has found that infant attachment has developmental and socio-emotional implications from childhood through to adulthood (Belsky & Fearon, 2002; Dutra, Bureau, Holmes, Lyubchik & Lyons-Ruth, 2008; Sroufe, 2005). Furthermore, babies are born into a complex social and interpersonal world and from a developmental perspective, young infants are dependent on the presence of a caregiver to navigate the social environment and help to provide meaning to their experiences (Fonagy & Allison, 2014; Luyten & Fonagy, 2015). Therefore, the role of the caregiver could fundamentally affect how the infant understands themselves and those around them.

It has been proposed that the mechanisms underlying the quality of parenting and attachment are linked to the parent's capacity to mentalize (Fonagy, Gergely, Jurist, 2004; Slade, 2005). Mentalizing has been defined as the capacity to perceive and interpret human behaviour in terms of intentional mental states (e.g. needs, desires, feelings, beliefs) (Allen, Fonagy & Bateman, 2008). Fonagy and Target (2003) report that mentalizing in the attachment relationship is an evolutionary function that helps to provide the child with a safe, understandable and predictable environment. However, this process should not be taken for granted, as mentalizing is not thought of as an innate capacity that is fully acquired or maintained (Fonagy & Allison, 2012). Indeed, neuroscientific and behavioural studies have found that mentalizing is underpinned by neurobiological systems (Nolte, Bolling, Hudac, Fonagy, Mayes & Pelphrey, 2013), and mentalizing capacity can fluctuate as a result of interpersonal experiences (Wlodarski & Dunbar, 2014) and levels of emotional arousal (Rutherford, Booth, Luyten, Bridgett &

Mayes, 2015). One's capacity to mentalizing is therefore a process that is susceptible to change. Given that early experiences have implications throughout the lifetime, it seems relevant to investigate how the parent's mentalizing capacity affects the caregiving relationship.

Parental mentalizing refers to the parent's capacity to hold their child's mental states in mind (Slade, 2005). One recognised construct of parental mentalizing is Reflective Functioning (RF; Slade, 2005). RF in the context of parenting is considered as the parent's capacity to envision their own and their infant's thoughts, feelings and behaviours, and the ability to reflect on the relationship between themselves and their child (Slade, 2002; 2005). RF can be coded and measured on the Parent Development Interview (PDI; Slade, Aber, Bresgi, Berger & Kaplan, 2004), which is a semi-structured interview in which parents are required to reflect on their own, and their infant's experiences. Research has shown that higher parental RF is associated with secure infant attachment (Slade, Grienberger, Bernbach, Levy & Locker, 2005) and increased capacity of self-regulation in the child (Heron-Delaney, Kenardy, Brown, Jardine, Bogossian, Neuman, de Dassel & Pritchard, 2016). Although RF provides insight into how a parent understands and appreciates the mind of their child, the interview alone may not objectively capture how the child directly experiences the parent. For instance, the way in which the parent consciously talks about their child's internal processes during an interview could be very different to how they unconsciously respond to the child during an interaction. Therefore, parental RF does not fully determine how mentalizing is manifested in the parenting behaviours and experienced by the infant. Indeed, presumably there are many factors that influence the quality of the parent-infant relationship, other than how the parents reflect on the internal processes in themselves and their child.

Parental Embodied Mentalizing (PEM; Shai & Belsky, 2011a, 2011b) is a coding system that assesses how the parent conveys, through movement, their understanding of their child's inner experiences (Shai & Belsky, 2017). PEM is defined as parent's capacity to: "(a) implicitly conceive, comprehend, and extrapolate the infant's mental states from the infant's whole-body movement; and, (b) adjust their own kinesthetic patterns accordingly" (Shai & Belsky, 2011a, p.173). In contrast to RF, PEM is an observational measurement tool that assesses implicit nonverbal kinesthetic (bodily-based) interaction between the parent and infant. Indeed, rather than assessing parental mentalizing capacity from the parents' subjective reflections (i.e. measured on PDI-RF), as an observation of the dyadic interaction, PEM could potentially illuminate *how* parental mentalizing is experienced by the infant. Recent studies have indicated that PEM could be a valuable tool to assess a multidimensional perspective of parental mentalizing. Specifically, a cross-sectional study found that higher PEM capacity at three months is associated with reduced parental stress (Shai, Dollberg & Szepeswol, 2017) and longitudinal research found that mothers with high PEM capacities at six months predicted reduced likelihood of insecure and disorganised attachment and advanced child language abilities, social competence, academic skills, behavioural problems at 15 and 36 months (Shai & Belsky, 2017). These findings indicate that embodied mentalizing could lead to more advanced child development and wellbeing in the family. However, these studies were based on normative samples and more research is required to examine how PEM is affected in a clinical setting.

The study of mentalizing is thought of as an applied science as it has developed from both laboratory based research and clinical practice (Midgley & Vrouva, 2012). Indeed, the process of reflecting on internal mental states is central to psychotherapeutic models and therefore it is a process that is integrated in clinical interventions across psychological disciplines (Allen et al., 2008; Diamond, 2010). One intervention offered

to parents and their infant identified at risk of relational disturbance is parent-infant psychotherapy (Baradon, Broughton, Gibbs, James, Joyce & Woodhead, 2005). This therapeutic model works with the parent and infant to enhance the quality of the relationship and promote attachment and infant development through enabling the parent to reflect upon their own and their infant's internal states (Baradon & Joyce, 2005). A recent systematic review of studies examining the effectiveness of parent-infant psychotherapies found that the intervention was a promising model for improving attachment security in high-risk groups (Barlow, Bennett, Midgley, Larkin & Wei, 2016). However, there was no evidence that it was more effective than no treatment or treatment as usual (TAU) at enhancing parent-infant relationships or outcomes for the parent (including RF) (Barlow, et al., 2016). In their study, Fonagy, Sled and Baradon (2016) conducted a randomised controlled trial (RCT) investigating outcomes for parents with mental health problems and infants referred to either parent-infant psychotherapy (intervention) or TAU (control) condition (of note, the current study is based on data from this trial). In contrast to the systematic review, Fonagy et al. (2016) found that mothers in the intervention condition reported improved mental health by the end of treatment compared to the mothers in the control condition, but the treatment did not significantly affect the infant's attachment security or mother-infant interactions. However, in another treatment comparison study, Salomonsson and Sandell (2011) found that parent-infant therapy improved mother-infant interactions more than a control condition; however, the mothers in their study were not identified as having mental health problems. Therefore, it could be that mothers with underlying mental health concerns present additional challenges when targeting relational outcomes in parent-infant psychotherapy. Taken together, these findings highlight that more research is required to understand the processes of improving outcomes for parents and infants through specialist interventions.

In light of the literature, the next step is to evaluate the effects of interventions supporting parents and infants. The needs of vulnerable families have been recognised nationally and a specialist perinatal mental health community services development fund was recently launched to promote services and care available to women and families (NHS England, 2016). The impact of an increase in services indicates that there will be a greater demand for clinicians working with children and families. Given that Counselling Psychologists have a relational and integrative therapeutic background, and are trained to work with individuals and groups across the lifespan (Strawbridge & Woolfe, 2010), with the expansion of perinatal services Counselling Psychologists could become a key part of the workforce in this clinical field. In her qualitative research, Riha (2011) found that Counselling Psychologists working within children and families described that their varied training experiences provided them with the skills to adapt to the specialist contexts and from her findings, the author constructed the term “being a professional chameleon” to encapsulate how the participants reflected on their work with children (Riha, 2011, p. 179). While this term may illuminate the range of professional roles Counselling Psychologists fulfil, perhaps it does not encapsulate what contributions members of the discipline can make to this area of work. James and Bellamy (2010) argue that Counselling Psychologists who work with clients with complex needs should encourage promoting psychologically informed formulations and as a profession are able to shape the direction of the workforce. The training background and vocational opportunities suggest that working with children and families is an increasingly relevant area for those in the discipline. It therefore seems that a study examining relational processes between parents and infants in a clinical context is well positioned in Counselling Psychology.

The purpose of the study was to conduct a secondary data analysis on existing longitudinal treatment outcome data (Fonagy et al., 2016) that evaluated the effect of

parent-infant psychotherapy compared to TAU on maternal mental health and infant development. This current study was designed to utilise and expand findings of the original research. At the time of developing the current research design, the data from the original study were unknown, and this arguably added to the development of an impartial design. The current project employed a mixed-methods design, using data obtained from Fonagy et al. (2016) and applied the following procedures:

1) the current author coded the whole sample for PEM using video-footage of mother-infant free-play interactions. Thus, PEM was a new contribution to the dataset as it was not coded as part of Fonagy et al. (2016) original design; 2) quantitative data analysis was then conducted in order to examine whether parent-infant psychotherapy was more beneficial than TAU at enhancing embodied mentalizing; 3) further statistical analysis were applied to explore the associations of PEM with outcomes of parental representations, infant attachment, maternal mental health, infant development and parent-infant interactions and; 4) in order to investigate the themes and elements of change in explicit and implicit mentalizing capacity over time, a subsample of cases were selected and Thematic Analysis (TA; Braun & Clarke, 2006) was applied on two forms of qualitative data. This data included a) the observational narratives of parent-infant interactions from PEM coding and b) the full raw PDI transcripts. TA provided an opportunity to combine different types of data and identify patterns of meaning to elucidate the process of parental mentalizing during early infancy.

. A mixed-method design was conducted to provide insight into *what* and *how* parental mentalizing capacity developed and became embedded in the parent-infant relationship. The integration of methods allowed an opportunity to enhance the findings as quantitative analysis provided generalized results across the sample, and the qualitative analysis illuminated unique insights into the processes underlying mentalizing. It was intended that both methods combined could contribute findings to

empirical and clinical practice aimed at supporting the wellbeing of parents and their children.

This thesis is presented in seven sections. Following the Introduction section is a Literature Review of seminal and contemporary contributions to attachment theory. This review includes a critical engagement with the theoretical foundations and methodological and assessment procedures, as well as the clinical implications of the body of work. The next section presented is the Method of the current study, which is followed by the Results and Discussion sections. The thesis concludes with final thoughts regarding Reflexivity on the process of undertaking the project.

LITERATURE REVIEW

Attachment theory offers a life span developmental approach with a relational focus, and therefore a relevant theoretical perspective for Counselling Psychologists (Lopez, 1995; Rizq, 2010). Research in this field can inform Counselling Psychology practice and add to evidence on therapeutic processes, especially when working with parents (Rizq, 2010). Research has indicated that mentalizing, the capacity to hold mind in mind, is a process that underpins attachment security (Fonagy, Steele, Steele, Moran & Higgitt, 1991; Slade, 2005). Given that secure infant attachment is associated with positive health and relational outcomes in childhood through to adulthood (e.g. Sroufe, 2005), it is pertinent for those in the discipline to understand how mentalizing develops in the early caregiving relationship.

To date, research has focused on exploring how the parent's capacity to explicitly verbally reflect on their own and their infant's mental states influence the quality of caregiving (see Camoriano, 2017 for a review). However, the parent's ability to verbalise their understanding of their child's internal world could be a relatively different capacity to how they automatically nonverbally respond during an interaction. In order to understand how mentalizing can manifest beyond language, PEM was developed to assess the parent's ability to express nonverbally their attempts to understand what their child wants and feels in the here-and-now of the interaction (Shai & Belsky, 2011a, 2017). Extending knowledge of how both embodied interactions and reflective expressions develop in the parent-infant could provide a fuller understanding of the processes underlying infant attachment and its influence on wellbeing in childhood and beyond. Moreover, to study these influences in a clinical population (such as mothers with mental health difficulties) could offer insight into treatment targets for those most at risk of relational disturbance.

Counselling Psychologists offer important work with children and families; however, as a discipline, their clinical and empirical contributions have been underrepresented on the literature (Riha, 2010, 2011). Therefore, this thesis aimed to contribute to research examining the processes underlying the development of the parent-infant relationship and produce findings that can be transferred to Counselling Psychologists and clinicians working with families.

Attachment Theory

Individuals live in a social interpersonal world and Counselling Psychology specifically values relational models of theory and practice, which are grounded in understanding the process of a two-person psychology (British Psychological Society; BPS, 2007; Rizq, 2010). The discipline values a holistic perspective and assumes that experiences are embedded in both evolutionary and personal histories (Gillies, 2010). Therefore, in order to understand an individual it is considered crucial to explore the social world surrounding them (Milton, Craven & Coyle, 2010). John Bowlby's (1969, 1988) attachment theory signified a revolutionised thinking on human social relationships. Bowlby dedicated his work to understanding how early caregiving relationships influenced an individual across the lifespan. Drawing on evolutionary and ethological orientations, Bowlby's formulations on the universal human need to form close, intimate, affectionate bonds has become one of the most empirically grounded theories related to parenting (Benoit, 2004).

From birth, babies are primed to be social beings (Brazelton & Sparrow, 2006). According to attachment theory, babies are seen to have a biological drive to seek proximity to a protective adult and when they encounter perceived threats or manage unfamiliarity in the environment, the infant's attachment system is activated to seek an older, wiser and stronger adult in order to feel safe, secure and survive danger (Bowlby,

1969, 1988). In attachment relationships, the instinctual drive to seek proximity functions as a buffer for anxiety and it emphasises the role of interpersonal experiences on affect regulation (Mikulincer, Shaver & Pereg, 2003; Schore, 2000). It is the interpersonal relationship with an attachment figure that offers a secure base for the infant, providing a safe haven for the child when upset, as well as a sense of safety to explore the environment (Bowlby, 1969). From this perspective, it seems that babies are not born with the capacity to regulate their own emotional reactions. However, it is not always the case that parents are able to provide emotional support for their child. Positioned from an attachment framework, the current study aimed to examine how parents can be supported to enhance the quality of their relationship when difficulties between the parent and infant have been identified.

Attachment theory is a relational model that emphasises the behaviours of both the child and the parent. From an evolutionary perspective, in normal development infants have adaptive proximity promoting behaviours, which include attracting signals such as cooing, reaching out and smiling, or protest signals such as screaming, fretting and crying. These signals are thought to be an attempt to illicit attachment behaviours in the parent towards the infant, such as touching, holding and soothing and in turn, these patterns reinforce the infant's attachment towards that particular figure (Ainsworth, Blehar, Waters & Walls, 1978; Bowlby, 1969;). The early caregiving interactions are thought to be crucial in the formation of the infant's Internal Working Model (IWM) of relationships (Bowlby, 1969). An IWM is a set of mental expectations and beliefs about the self, other and the relationship between self and others (Bowlby, 1969; 1989). These IWMs are considered to be particularly important they are thought to remain an individual's representational template of relationships across the lifespan (see Bretherton, 2005 for a review).

The quality of caregiving has implications across the life span and understanding a client's early experiences can provide one perspective to explore in clinical practice when working therapeutically with adults (Holmes, 2010; Wallin, 2007). Indeed, attachment theory is integrated into Counselling Psychology practice across populations and therapeutic modalities and is one of the more prominent approaches across the discipline (Hansen, 2006; Jordan, 2010; Larrson, 2012; Rizq, 2010). Therefore, a study investigating the underlying mechanisms of attachment directly in the parent-infant relationship is relevant to Counselling Psychologists working with children, as well as understanding how these experiences affect adults in later life.

Infant Attachment Classifications

In relation to studying the influence of early experiences of caregiving, infant attachment classifications provide a valuable foundation to investigate how the quality of the relationship has manifested by the first year of life. In order to investigate how attachments vary in children from this age, Ainsworth and Wittig (1969) developed the Strange Situation Procedure (SSP) as a standardized assessment of infant attachment security. The SSP is a laboratory based observational assessment of the infant's responses to a series of separations and reunions with their parent and attempts to elicit heightened arousal in the infant in order to assess the IWM of the infant's expectations of an available caregiver. Specifically, SSP measures the infant's attachment strategies when reunited with the parent (Ainsworth et al, 1978; Ainsworth & Wittig, 1969). Ainsworth and colleagues identified three attachment classifications. These categories were initially based on the observations of the infant's behavioural responses in the SSP; however, future research extended this work and examined the parental responses associated with infant attachment classifications, which are outlined below.

In the SSP, infants who approach and seek comfort from their parent when reunited are classified as *securely* attached. Parents of secure infants are considered to respond to the infant's signals in a sensitive, appropriate and timely manner (Ainsworth, et al., 1978). Infants that express mixed behaviours on reunion, such as directing towards and then directing away from the parent, are classified as *anxious-resistant (ambivalent) insecure*. The parental behaviour of these infants has been related to inconsistent and unpredictable responses (Mayseless, 1998). Infants observed to ignore and withdraw from the parent on reunion are classified as *anxious-avoidant insecure*. In these cases, parent's responses have been associated with rejecting behaviour (George & Solomon, 1999). Further research found that some infants failed to fit Ainsworth et al. (1978) traditional categories and Main and Hesse (1990) identified a fourth classification. Main and Hesse (1990) found that during the SSP some infants were observed to display contradictory responses, exhibiting both avoidant and ambivalent behaviours on reunion and these infants are classified as *disorganised/disoriented* attachment (Main & Solomon, 1990). For example, these infants could both approach and then avoid the parent on reunion (Main & Hess, 1990). Characteristics of parent's interactions include frightened and frightening behaviours (Lyons-Ruth & Spielman, 2004). These responses can involve parents appearing frightened by the child and withdrawing (e.g. the parent moves away whenever the child approaches) or frightening parental behaviours that include expressing negative-intrusive interactions (e.g. assuming attack postures by thrusting head and neck forward) (Lyons-Ruth & Spielman, 2004)

The classification system demonstrates how repeated experiences of caregiving can lead to relatively well established reciprocal patterns of behaviour by the first year of life. Bowlby (1969) considered that these early experiences shape psychological growth and therefore could have implications beyond infancy.

Psychological Implications of Attachment Experiences in Childhood

Research has investigated the relationship between infant attachment and developmental and socio-emotional outcomes across the lifespan. For example, cross sectional and longitudinal epidemiological studies have demonstrated a correlation between insecure attachment experiences and increased sleeping problems in infancy (Morrell, Steele, 2003), more emotional and behavioural difficulties in toddlerhood (Tharner, Herba, Luijk, van IJzendoorn, Bakermans-Kranenburg, Govaert, Roza, Jaddoe, Hofman, Verhulst & Tiermeier, 2011), increased conduct problems in early childhood (Vando, Rhule-Louie, McMahon & Spieker, 2008), adjustment difficulties in middle childhood (Goldner & Scharf, 2013), and higher emotional dysregulation in adolescence (Bender, Sømhovd, Reinholdt-Dunne & Esbjørn, 2015). Infant insecure attachment has also been found to relate to greater report of physical illness (Puig, Englund, Simpsons & Collins, 2013), reduced capacities for self-regulation (Moutsiana, Fearson, Murray, Cooper, Goodyer, Johnstone & Halligan, 2014), and increased interpersonal difficulties (Fonagy & Bateman, 2008) in adulthood. These studies combined draw upon normative, clinical, high risk and low risk samples and offer valuable overview into the multidimensional trajectories of attachment. Therefore, to improve the quality of infant attachment might lead to greater adjustment and lower psycho-social difficulties in adulthood which could impact on the quality of parenting on the next generation.

The current findings highlight the range of implications associated with attachment security; however, direct effects of early attachment on later functioning are difficult to establish. Meins (2017) presented a compelling paper in which she argued research over emphasises the predictive power of attachment. She suggests that studies generally highlight the differences between secure and insecure attachment, but this does not identify the important distinctions between classifications of insecurities

(anxious-avoidant and anxious-resistant). Furthermore, Meins stresses the value of understanding the quality of the relationship as not as a fixed trait. She suggested that studies tend to exclude the potential impact of an infant experiencing different qualities of attachment experiences with different caregivers. Moreover, other researchers have established that there are often mediating and moderating factors such as developmental and social processes that influence later experiences and therefore infant attachment security does not play a direct role for influencing later developmental outcomes (Belsky, Bakermans-Kranenburg & van IJzendoorn, 2007; McConnell & Moss, 2011; Sroufe, 2005). Indeed, Counselling Psychologists are particularly concerned with understanding the holistic experiences of individuals, and the impact of the social systems around them (Strawbridge & Woolfe, 2010). Therefore, it is valuable to investigate what environmental factors could affect the early caregiving relationship.

Parenting in Social Adversity

Parents and infants live in a social milieu and the network that surrounds the infant is significant (Joyce, 2005). Features of the socioeconomic position (e.g. income, poverty, education, employment) can shape an individual's environment and social adversity for families includes isolation, limited access to resources and education, disability and family separation (World Health Organization, 2016). Living in social deprivation can create considerable challenges for families, and the additional stress associated with social disadvantage can push parents coping resources to the limit (Puckering, 2004).

The impact of living in social adversity can affect parenting. Cross-sectional empirical studies have identified that socioeconomic disadvantage is associated with harsher parental behaviours (Scaramelle, Neppl, Ontai & Conger, 2008), and withdrawn interactions (Chen & Berdan, 2006). Research has identified that deprivation is

associated with lower parental warmth (Stansfeld, Head, Bartley & Fonagy, 2008) and high-levels of social adversity are considered risk factors for maternal psychiatric illness (Dickstein, Seifer, Eguia, Kuersten-Hogan & Doge, 2002; Fonagy et al, 2016; Wickrama, Hejern, Gunnell, Lewis & Dalman, 2005). Indeed, longitudinal epidemiological studies have shown families experiencing social adversity experience more stress than individuals of higher social economic status (Aber, Jones, & Cohen, 2000; Wickrama, Conger & Abraham, 2005). The impact of living in socio-economic deprivation during childhood has also been linked to adverse effects on children (Duncan & Brooks-Gunn 2000; Spencer & Strazdins, 2015), specifically, more physical aggression (Campbell, Spieker, Vandergrift, Belsky & Burchianal, 2010), impairments in cognitive development (Clearfield & Jedd, 2013; Duncan, Brooks-Gunn & Klebanon, 1994) and increased mental health difficulties (Wadsworth & Achenbach, 2005). A qualitative biographical narrative study of thirty-four parents' experiences of current social deprivation revealed that parents explicitly connected their problems to their own history of social deprivation in childhood, which suggests that childhood adversity could exacerbate difficulties later in adulthood (Webb, Bunting, Shannon, Kernaghan, Cunningham & Geraghty, 2014). The reasons behind the problematic outcomes for parents and infants are complex and multifaceted. However, it seems that the stress of living in deprivation can affect parenting and the implications for families experiencing social adversity are a significant concern for clinical practice.

Fagin (2016) is a specialist parent-infant therapist and Counselling Psychologist and from his clinical experience provides contributions to advancing therapeutic interventions for families at the edge of care. He suggests an integrative approach should be applied that targets individual factors (e.g. parental mental health), relational factors (e.g. lack of personal and social support) and environmental factors (e.g. poverty), to lead to an increased possibility of positive changes in the parent-infant

interaction. These clinical interventions are aligned with findings from empirical studies that identify cumulative risks are associated with the social environment and the quality of parenting behaviour.

The impact of living in socioeconomic disadvantaged indicates that features of the external environment can disrupt parenting behaviour, which can affect attachment and child socio-emotional development. Research suggests that an influential factor is the parent's coping resources when living in adversity. Indeed, if a role of attachment is to provide a 'safe haven', families should be supported when faced with deprivation to be in a better position to provide a safe environment.

Maternal Mental Health Problems

Caring for a young child can place psychological and physical demands on the caregiver, which could be particularly challenging for some parents. Depression and anxiety affects approximately 15-20% of mothers in the first year after childbirth and postpartum psychosis affects between 1-2 in 1000 women who have given birth (National Institute for Health and Care Excellence; NICE, 2014). Risks associated with postnatal depression include socioeconomic status, previous mental health difficulties, social support and hormonal changes (Misri, Abizadeh & Norwan, 2016), and problems in pregnancy (Field, Sandberg, Garcia, Vegar-Lahr, Goldstein & Guy, 1985). Therefore, the impact of maternal mental health on parenting is an area of concern.

Maternal psychiatric illnesses adversely affect caregiving and postpartum depression is associated with difficulties responding to an infant's social interactions (Murray, Cooper & Hipwell, 2003). For instance, mothers with depression have been found to exhibit a particular profile of behaviour characterized by intrusive interactions associated with abrupt physical contact and loud vocal tone, or withdrawn interactions associated with disengaged behaviour, lack of physical contact and flat vocal tone

(Diego, Field, Hernandez-Reif, 2001; Diego, Field Diego, Field, Jones, Hernandez-Reif, 2006). Theoretically, it could be that depressed mothers can become preoccupied with their own feelings, withdrawn, and therefore less engaged or responsive to their infants (Murray et al., 2003). Experimental tasks have found that mothers presenting with anxiety when their child is six-months old have less responsive interactions, lower emotional tone and are more withdrawn from their infants at ten-months compared to mothers without anxiety (Stein, Craske, Lehtonen, Harvey, Savage-McGlynn, Davies, Goodwin, Murray, Cortina-Borja & Counsell, 2012). These studies provide evidence on how parental mental health can manifest in the caregiving interaction; however, they do not indicate how the parent's own relational history could become embedded within the relationship.

Mothers who have experienced early trauma, abuse, and unresolved loss are considered a particularly vulnerable population (Lyons-Ruth, Yellin, Melnick & Atwood, 2003). Parental caregiving in this group has been associated with anomalous behaviours towards the infant, in particular the frightened or frightening behaviours associated with disorganized attachment (Lyons-Ruth & Spielman, 2004; Main & Hesse, 1990). In these cases, the infant's attachment figure (that should be a source of comfort) becomes the source of fear, which can lead to a breakdown of the infant's coping strategies (Lyons-Ruth, 2003). Longitudinal studies have found that disorganised attachment in childhood is associated with psychological distress and interpersonal difficulties in adulthood (Carlson, 1998; Macdonald, Beeghly, Grant-Knight, Augstyn, Woods, Cabral, Rose-Jacobs, Saxe & Frank, 2008). Therefore, families identified with disorganized patterns are of significant concern in clinical practice.

Winnicott (1960) identified that following the birth and in good-enough parenting situations, mother's can experience a condition that he termed primary

maternal preoccupation. In this process, Winnicott (1960) considered that the mother becomes psychological and biologically orientated towards the infant, and highly sensitive and attuned to her baby's signals. However, Raphael-Leff (2010), suggested there was an alternative phase, which she considered evoked a more malevolent form. She described a condition of primary maternal persecution. In her view, some mothers can feel like failures and may develop feelings of hate and resentment towards their infant. These theoretical processes are important to bare in mind, as it could be that for mother's affected by mental health difficulties or past traumas, the birth of the infant could exacerbate existing disturbing feelings which could impinge on the developing relationship with the baby.

As highlighted, evidence indicates that families affected by mental health could be particularly vulnerable during the earliest stages of parenting (e.g. Field, et al., 1985; Misri et al., 2016). This literature suggests that parental wellbeing can affect the quality of interactions and therefore can shape the early caregiving environment. However, infants are born into a relational and social matrix and it is important to address the influences outside of the mother-infant relationship in order to understand the environment surrounding the infant and more specifically the roles and impact of fathers.

Fathers and Parenting

Thus far, this literature review has detailed research findings that emphasise the importance of investigating the impact of maternal mental health on parenting behaviours and infant development. The focus on maternal factors could relate to an assumption that it is the mother that will predominately constitute the infant's environment in the postnatal period (Murray et al., 2003). However, parenting does not

just affect women, and the role of fathers has not been neglected in empirical research (Vetere, 2004).

Condon, Boyce and Corkindale (2004) conducted a longitudinal study with over two hundred first time fathers to investigate their experiences of parenting. Fathers completed a battery of self-report measures regarding their psychological and interpersonal functioning at the antenatal period and a year later, and the study found that fathers reported that the most stressful period of fatherhood was during their partners pregnancy, and this was related to feeling unprepared for the impact of becoming a parent. Indeed, perhaps as it seems there is more focus on the mother during pregnancy, the impact of parenting for the father may be overlooked. In other research, empirical studies have conducted behavioural observations of fathers free-play interactions in a clinic-setting, which found that fathers with depression displayed more withdrawn behaviour and less physical contact with their infants at three-months compared to non-depressed fathers (Sethna, Murray, Netsi, Psychogiou & Ramchandani, 2015). In addition, partners of depressed mothers have been found to display less optimal parenting interactions with their infants at two to three months (Goodman, 2008), but more positive interactions by three to six months (Hossain, Field, Goxalez, Malphurus, De Valle & Pickens, 1994). Thus, it seems that fathers too can be affected by adjusting to parenthood, and this could lead them to be particularly sensitive to the impact of maternal mental health in early stages of parenting. However, it seems that after the initial transition to parenthood, fathers could be in a position to ameliorate the impact of maternal depression on their infant. Developmentally, fathers are thought to play an important role in both supporting the mother with parenting, as well as protecting the child against prolonged emotional entanglement with the mother (Raphael-Leff, 1991). While the baby may initially relate as a dyad with the mother, the child is born into a relational mother-father-infant constellation. This three-person

relationship can be understood literally when the father is present, and symbolically when the father is absent (Stern, 1985). Indeed, the representation of the father in the mother's mind is a crucial factor for how the infant incorporates a relational space for a third relationship (Baradon et al, 2005). Drawing from psychoanalytic theory, these early relationships are thought to provide the foundation of the child's representations of the self, other and self-other relations (Stern, 1985). Winnicott (1988) describes this interpersonal relationship as, "the simple triangle that presents the difficulties, and the full richness of human experience" (Winnicott, 1988, p. 39). While this current study is an exploration of the dyadic mother-infant relationship, it will be important to acknowledge that fathers could potentially influence aspects of the mother-infant relationship and child development.

Assessing Parenting Behaviours

Counselling Psychologists' training emphasises developing a reflective stance that focuses on exploring subjective and intersubjective processes (BPS, 2007; Health Care Professions Council, 2015). The discipline emphasises a focus on phenomenological experiences, and clinical practice includes exploring both verbal and nonverbal body communication as this enhances careful attention to the possible internal processes (Eleftheriadou, 2010; Gilbert & Leahy, 2007; Gillies, 2010; Jacobs, 2010; Strawbridge & Woolfe, 2010). In terms of clinical work with families, Stern (1995) advocates the use of exploring the parent-infant interaction in the clinical situation. He posits that the interactive processes are a key element as relational problems "live" in the interaction (Stern, 1995, p.60). It would seem that observations enable a greater view of the whole person and dyad and are relevant to both clinical and empirical enquiry.

Empirically validated measurements of parent-infant interactive behaviours have recently been reviewed and revealed that disruptions in parental behaviour affect the quality of the caregiving relationship (Sleed & Fonagy, 2010). Of the sixteen dyadic coding assessments that were examined, specific components of parenting were identified across the measures and included parental behaviour (e.g. Biringen, Robinson & Emde, 1993), disruptions in the caregiving interactions (e.g. Feldman, 1998), distinguished between high risk and low risk samples (e.g. Hughes, 1993) and features of parental behaviour associated with disorganised attachment (e.g. Bronfman, Parsons & Lyons-Ruth, 1999). In their review of these measurements, Sleed and Fonagy (2010) identified good associations between caregiving behaviour and infant attachment security. They also found that the sixteen coding systems measured the same concepts that included sensitivity, affective quality of the interaction, cooperation and parental emotional support. Taken together, these findings suggest that particular concepts of parenting behaviour are significant across populations; however, these concepts do not identify the infant characteristics. Indeed, to fully understand the interactive process between the parent and infant, understanding the typology of the dyadic (not just parental) behaviour is important.

Observational assessments are valuable tools as they help to identify qualities of parenting behaviours. These interactive patterns are meaningful as they shape the caregiving environment in infancy as well as providing indications of internal psychological processes. The next section further explores how these internal processes influence the quality of parenting and the caregiving relationship.

Parental State of Mind

According to Bowlby (1969), early attachment shape experiences across the lifespan. Indeed, parents bring their own expectations of parenting, as well as their own

experiences of caregiving. An important distinction could be made between what occurred in childhood and how this is recalled and mentally represented in adulthood.

The Adult Attachment Interview (AAI; George, Kaplan & Main, 1985) is a semi-structured interview designed to measure a parent's memories and reflections about their childhood attachment experiences and to evaluate these from their current perspective. Evidence has found that the parental state of mind with respect to their own infant attachment is closely associated with the relationship with their own child (Crawford & Benoit, 2009; Hesse & Main, 2006; Levy, Blatt, Shaver, 1998; Main, Kaplan, & Cassidy, 1985). A model to understand this pattern, proposed there was an intergenerational transmission of attachment, specifically that the parent's early attachment experiences affects the quality of the parenting behaviour, which in turn influences the infant's attachment security (van IJzendoorn & Bakermans-Kranenburg, 1997). A meta-analysis based on over 10,000 AAIs from mothers and fathers in clinical and non-clinical populations, revealed strong correlations between infant attachment security measured by SSP and parental states of mind in relation to attachment assessed by AAI (Bakermans-Kranenburg & van IJzendoorn, 2009). While the findings supported the above model there was a caveat; it failed to explain why twins growing up in the same environment could have different attachment classifications with the same parent (O'Connor & Croft, 2001; O'Connor, Croft, Steele, 2000). Therefore, the explanation of parental representations of early attachment influencing the intergenerational transmission of attachment seemed too limited.

The current literature review has identified there are complex processes involved in the development and trajectory of attachment. It seems to be important to understand factors that influence parental representations of their own and their child's experiences and the ways in which this may affect the quality of the relationship.

Mentalizing

Mentalizing is regarded as a form of imaginative mental activity about others or oneself, which involves interpreting behaviour in terms of intentional mental states (Fonagy, Target, Steel & Steel, 1998). A longitudinal study identified that parental representations of their childhood attachment assessed on the AAI during pregnancy, were significantly related to later infant attachment (Fonagy, et al., 1991). The authors reported that the key determinant of security was not related to the parental representations or history, but lay in the parent's ability to see relationships in terms of mental content, which in turn provided a psychological environment for the infant. The study suggested that the parent's capacity to mentalize and reflect on their childhood experiences, rather than just the experiences themselves, could influence the quality of their caregiving capacities. Therefore, higher capacities of mentalizing could interrupt the developmental and relational implications of attachment in infancy.

The process of monitoring and responding to moment-to-moment changes in the child's mental states has been suggested to be the process underlying sensitive parenting behaviour (Allen et al., 2008; Fonagy & Target, 1997). Therefore, mentalizing integrates an understanding of how the processes of representational and interactive patterns influence the relationship. In the context of attachment relationships, parental mentalizing refers to the parent's capacity to treat the child as a psychological agent and represent the breadth of the child's internal experiences (Slade, 2005; Sharp & Fonagy, 2008). Theoretically, mentalizing suggests that the child's development and perception of mental states in themselves and others depends on the observations of the mental world from the parent (Fonagy & Target, 1997). Prospective and cross-sectional studies have identified that the parent's capacity to hold the infant's inner world in mind, thus affecting their ability to respond sensitively to the infant's mental states, is a pathway underlying optimal parenting and secure attachment. For instance, a cross-sectional

study found that high levels of mentalizing is associated with increased distress tolerance in parenting with infants aged between three to ten months (Rutherford, Goldberg, Luyten, Bridgett & Mayes, 2013), and longitudinal studies have found that parent's high mentalizing capacity during pregnancy is related to less withdrawn and negative caregiving behaviours at 16-months (Ensink, Normandin, Plamondon, Berthelot & Fonagy, 2016) and increased sensitivity and positive engagement at six-months (Smaling, Huijbregts, Suurland, van der Heijden, Mesman, van Goozen & Swaab, 2016). Given the implications on parenting behaviour, low mentalizing capacity could elucidate why some adult psychological difficulties may develop (Bateman & Fonagy, 2004; Sharp & Fonagy 2008). It seems the infant's experiences of being treated as a separate psychological agent with a complex internal world has implications from childhood through to adulthood. Indeed, cultivating a mentalizing environment in early caregiving seems to be a process involved in developing the 'safe haven' that shapes experiences throughout the lifetime.

Theoretical literature and empirical studies reveal that mentalizing is embedded in relationships and influences how an individual thinks, feels and responds in social interactions and the world around them. To understand and examine this process could be particularly relevant to Counselling Psychologists who value relational and holistic models of practice.

Polarities of mentalizing. Drawing from behavioural and neuroscientific studies, Luyten and Fonagy (2015) have identified that mentalizing is a multidimensional construct and can be organised along four polarities: automatic/controlled, internal/external, self/other focused and cognitive/affective.

Neuroimaging studies have identified that core processes of automatic/controlled mentalizing and underpin aspects of the other polarities

(Lieberman, 2007). Automatic implicit mentalizing is characterised as nonconscious, nonverbal and nonreflective fast processing of social information. In comparison, controlled explicit mentalizing is a conscious, verbal and reflective slow processing of social information (Lieberman, 2007; Spunt & Lieberman, 2013). Neuroscientific research has used magnetic resonance imaging during experimental studies where participants are required to process social information and findings indicate that automatic (implicit) and controlled (explicit) mentalizing involve two distinct neural systems. Older brain circuits that depend on predominately sensory information appear to underlie automatic (implicit) mentalizing and in contrast, relatively newer brain circuits that depend on more linguistic and symbolic processing have been associated with controlled (explicit) mentalizing (Lieberman, 2007; Satpute & Lieberman, 2006). These automatic and controlled neurobiological processes underpin different aspects of mentalizing, which are briefly outlined below (Fonagy & Luyten, 2010; Luyten & Fonagy, 2015).

Internal/external polarity refers to a focus on internal mental states or on external facial expressions; self/other polarity refers to whether an individual is reflecting on themselves or others; and cognitive/affective polarity relates to perspective taking and belief-desired reasoning or affective empathy (Luyten & Fonagy, 2015). These polarities indicate that mentalizing is multifaceted and dimensional. Indeed, it is not categorical system whereby the individual is either classified as either mentalizing or not. Rather, the dimensional framework suggests a process whereby an individual can shift in their capacity and mode of mentalizing.

The polarities highlighted suggest mentalizing as an active dynamic process. Yet, the neurobiological underpinnings of mentalizing may be suggestive of cognitive deficits, which could be considered as a reductionist model of the mind (Milton, 2010). Further, other researchers have suggested that as the concept of mentalizing draws upon

a range of psychological models, including attachment, psychoanalytic and cognitive perspectives, mentalizing is therefore an umbrella term that ultimately overlaps with existing models (Choi-Kain & Gunderson, 2008). From this perspective, it could indicate is that mentalizing is an all-encompassing concept and the broad psychological underpinnings may not be relevant for all dimensions. For example, Davidsen and Fosgerau (2015) argue that adopting a phenomenological position, rather than a mentalizing perspective, could provide a richer understanding of how an individual implicitly understands a social interaction. Moreover, assessments of mentalizing predominately focus on the explicit polarity (outlined below), and although mentalizing is embedded in social-ontological assumptions, this emphasis could overlook the role of embodied and enactive social-cultural dimensions (Køster, 2017). For instance, Køster (2017) suggests that the concept of mentalizing developed in response to impaired-social functioning and from this position of abnormal psychology, is a concept that orientates itself towards an emphasis on individual factors and overlooks the social contextual level. He suggest that the dimensions of embodiment encapsulate interactions, and rather than a focus on the individual and psychopathology, emphasis should seek to explore to understand how the interaction is embedded in broader social-cultural framework. Indeed, Ripple (2017) extends the arguments and suggest that the emphasis on dyadic processes of mentalizing could limit our understanding of how social, cultural and political environment influence interpersonal encounters. Drawing from this critical position, it seems that although mentalizing is grounded in multi-modal perspectives, the debates raised highlight that there are important considerations when understanding the philosophical and psychological underpinnings of social processes from a mentalizing-based perspective.

As presented, literature indicates that mentalizing is embedded in attachment and researchers have investigated how these processes manifest in the parent-infant

relationship. From a mentalizing view point within the focus of the current research, the role of operationalized measurements provide an opportunity to clinically and empirically assess parental mentalizing and examine how these can affect relational outcomes.

Measurements of parental mentalizing

Explicit mentalizing. Parental mentalizing is predominantly measured in terms of controlled explicit verbal processing. Three widely used instruments are outlined below.

Parental Reflective Functioning (RF). RF is the manifestation of the cognitive and emotional processes underlying the capacity to mentalize (Fonagy, Target, Steele & Steele, 1998). RF has been operationalized into a coding system that was originally developed for the AAI to assess an individual's capacity to fully experience their own and other's emotions in a non-defensive way (Fonagy et al., 1998). Parental RF specifically refers to the parent's capacity to hold the child's mental states in mind and represent and understand the child's inner experiences (Slade, 2005). Parental RF is used for scoring the Parent Development Interview (PDI; Slade, Aber, Berger, Bresgi & Kaplan, 1985). The PDI is a semi-structured interview, designed to measure parents' representations of themselves as parents, of their child, and of the relationship between them. Low RF scores indicate that the parent seems to have little notion of their child's internal experiences. Moderate RF suggests that the parent has the capacity to recognize that the child has mental states of their own and considers them as an intentional being. Parents who have high RF scores vividly convey the complex interplay between their own mental states and that of the child's (Slade, 2005). Research has indicated that parental RF is associated with current and subsequent infant attachment (Slade et al.,

2005; Grienberger, Kelly & Slade, 2005; Slade, Stack, Muzik, Wong, Beeghly, Huth-Bocks, Irwin & Rosenblum, 2014).

Insightful Assessment (IA). IA is rooted in attachment theory and assesses how parents' representations are applied directly in everyday interactions (Koren-Karie, Oppenheim, Dolve & Etzion-Carasso, 2002). Insightfulness has been referred as “the parent’s capacity to consider the motives underlying their children’s behaviour and emotional experiences in a complete, positive, and child focused manner while taking into consideration their children’s perspective” (Koren-Karin et al., 2002, p. 534). To assess IA, parents are filmed interacting with their infants and then later interviewed while watching back segments of interactions. Interviews are transcribed and coded for the parent’s level of insightfulness to their child’s experience. Based on their responses in the interviews, parents are classified in to one of four groups: 1) positively insightful (the capacity to see things from the child’s point of view); 2) one-sided; (a focus on one particular aspect of the child); 3) disengaged (demonstrate a lack of emotional involvement in the interview), or; 4) mixed (inconsistent responses; Koren-Karie et al., 2002). Cross-sectional studies have found that maternal depression was negatively related to insightfulness (Quitman, Kriston, Romer, Ramsauer, 2012) and mothers classified as positively insightful were more likely to have securely attached infants (Koren-Karie et al., 2002).

Mind-Mindedness (MM). MM examines parental mentalizing as it unfolds in the here-and-now of the parent-infant interaction (Meins, 1997). MM stems from cognitive and developmental theory and refers to the parent’s capacity to interact with their child as an individual with a mind with intentionality, not just an individual with physical needs that must be met (Meins, Fernyhough, Fradley & Tuckey, 2001). MM analyses parental speech during an interaction and assesses the propensity for the parent to comment on the infant’s internal states. Parents are filmed during a 20-minute free

play interaction and then the interaction is transcribed verbatim and each comment is coded into one of two categories. A mind-related comment is one that “ (a) uses an explicit internal state term to comment on what the infant may be thinking, experiencing, or feeling; or (b) ‘puts words into the infant’s mouth’ with the caregiver talking on the infant’s behalf” (Meins & Fernyhough, 2015, p.5). Comments regarding their infants are then classified as either attuned or non-attuned based on how accurately the coder perceived the parent has interpreted the infant’s mental state (Meins & Fernyhough, 2015). Studies have demonstrated that high scores of attuned comments and lower scores of non-attuned comments distinguish secure from insecure attachment (Meins, Bureau & Fernyhough, 2017).

Implicit mentalizing. A measure has been designed in order to assess the automatic, implicit and nonverbal processes, which is outlined below.

Parental Embodied Mentalizing (PEM). PEM was developed from attachment, developmental and relational theories, and movement paradigms (Shai & Belsky, 2011a; 2011b). PEM refers to the parent’s capacity to convey their understanding of (or trying to make sense of) what their infant wants and feels (Shai & Belsky, 2017). PEM is assessed using an observation of a ten-minute video-recorded dyadic social interaction, the sound is turned on mute and raters observe the whole-body dynamic movement in the parent-infant interactive exchange. PEM is coded in four stages and rated on a 9-point scale (an overview of the PEM coding procedure is presented in the Method section). Very low PEM scores indicate that the parent demonstrates severe difficulty in acknowledging the infant as a mental entity. Very high PEM scores indicate the parent is able to detect even subtle mental states and repair interactive ruptures very quickly (Shai, 2013).

Prospective studies have indicated that PEM is a distinct yet related measurement to assessments of explicit mentalizing. Findings show that PEM is positively correlated with parental RF (Shai, et al., 2017) and PEM at six months predicts infant attachment security at 15 and 36 months (Shai & Belsky, 2017). These studies are based on normative samples and prior to the current study PEM had not been assessed in clinical populations.

Empirical evidence suggests there are different pathways influencing the quality of the parent-infant relationship. The central considerations seem to pertain to examining the processes underlying caregiving and its effect on infant development. While explicit assessments of mentalizing illuminate the ability of the parent to envision their child's mind in terms of intentional mental states, these measures are based on language. These verbal-based assessments do not fully explain *how* the infant experiences parental mentalizing. Considering that the early stages of infancy are nonverbal, arguably it is crucial to understand the process of mentalizing in bodily-based exchanges, as these are the pathways of the communication between the parent and pre-verbal infant. Furthermore, while a parent may recall and reflect on an interaction with their infant, this may not be an accurate interpretation the infant's experience. Indeed, mentalizing is a multidimensional construct and therefore it is relevant to investigate the process of how multifaceted dimensions of mentalizing manifest in the parent-infant relationship.

The measures outlined are not exclusive to empirical work. Indeed, these assessments could be used as a clinical outcome measure to evaluate parental mentalizing from pre- to post-therapy. However, with further research it could be possible that constructs of the measures could be adapted so that they could be integrated into a therapeutic invention that directly targets parental mentalizing across the polarities.

Clinical Importance

There are a range of parent-infant relationship based therapies available to families. These treatments focus on several aspects that contribute to the child's difficulties and broadly fall within targeting the parental representations, the parent-infant interactions, or integrate both. Two specialist interventions are outlined below.

Video-feedback. The use of video-feedback is a relational intervention that involves filming and extracting segments of parent-infant interactions to review back with the parent. For instance, Video Interaction Guidance (VIG; Kennedy, Landon & Todd, 2010) is an attachment-based approach that aims to improve communication between the parent and child, which focuses upon reviewing behavioural interactions when the parent has responded in an attuned way to the child's actions. Treatment studies have found VIG to be effective in enhancing parental sensitivity with mothers and fathers with preterm babies (Hoffenkamp, Tooten, Hall, Braeken, Eliëns, Vingerhoets & van Bakel, 2015), and reduced maternal depression in a group-based intervention (Rackett & Macdonald, 2014). These studies were based in clinic and hospital settings and demonstrate how VIG can be applied in various contexts across clinical groups.

In contrast, Video Intervention to Promote Positive Parenting and Sensitive Discipline (VIPP-SD; Juffer, Bakermans-Kranenburg, van Ijzendoorn, 2008) combines behavioural and representational approaches. It is a preventative intervention aimed at enhancing parental sensitivity and improving sensitive discipline (Juffer et al., 2008). VIPP-SD has been associated with positive effects on enhancing parental sensitivity (Juffer, Struis, Werner, & Bakermans-Kranenburg, 2017) and decreasing harsh discipline in high-risk populations (Negrão, Pereira, Soares & Mesman, 2014). Together, it seems that video-feedback interventions are predominately associated with

improvements in the quality of caregiving. Presumably, it would be anticipated that parenting behaviour would be a significant treatment outcome as the intervention focuses on enhancing the quality of the interactions; however, future research could investigate how video-based interventions influences infant and relationship outcomes.

It seems that video-feedback integrates both implicit and explicit polarities of mentalizing. Although different therapeutic targets, the intervention explores the automatic implicit communications retrospectively during the feedback with the parent as they explicitly and consciously reflect on the interaction. This is valuable, as being in the role of the observer provides the parent with another perspective on their interactions. Indeed, a systematic review of video feedback interventions, found that shorter programs of less than three months in duration based on seven or less sessions were more effective than longer open-ended programs, which led to a “short by powerful” hypothesis regarding the effectiveness of video-feedback models (Fukkink, 2007 pg. 913). Therefore, behavioural interactions seem to be flexible to change and these interventions could be a cost effect treatment to support with insensitive parenting. However, these behavioural interventions could be less focused on exploring the parents understanding of their history and potentially entrenched difficulties, and therefore may not address significant aspects of the relationship.

Parent-infant psychotherapy. Parent-infant psychotherapy is a manualised therapeutic modality that aims to promote the parent-infant relationship and facilitate infant development (Baradon, et al., 2005). This treatment model considers that intergenerational repetition of parental experience and unresolved conflicts are fundamental to the disturbances in the parent-infant relationship (Fraigberg, Adelson, & Shapiro, 1975). Both mothers and fathers are invited to attend the sessions with their infant and the therapeutic aim of parent-infant psychotherapy is to promote a

psychological partnership between the parent and infant and towards an integration of affect, supported through play, behavioural inventions and verbal interpretations (Baradon, 2005). Core aims of the treatment include enabling the parents to reflect upon states of mind in themselves and their infant, thus increasing parental mentalizing capacity, to promote positive attachment behaviours between the infant and parents and to enable the parent to regulate their own and their infants affective states (Baradon & Joyce, 2005). The model is rooted in psychoanalytic theory, which considers that infants learn about their own experiences through the relationship with their attachment figures (Lieberman, 2004). It seems that parent-infant psychotherapy is a practice embedded in relational frameworks and a model that imbues the values of Counselling Psychology (Cooper, 2009).

A recent systematic review of the effects of parent-infant psychotherapy versus control (TAU or no treatment) found the intervention to be favourable for improving infant attachment, but not parental RF (Barlow et al., 2016). Given that the treatment focuses on parental mentalizing, and this is considered to underlie infant attachment, it was surprising that treatment was not found to effect parental mentalizing capacity compared to the control. However, the review was based on eight studies, which is relatively small sample and may not detect the influence of the intervention across clinical groups. Moreover, the study identified that there was limited data related to parental RF, therefore these results demonstrating the effectiveness of parent-infant therapy on parental RF should be approached with caution.

Recently, Fonagy et al (2016) conducted a study investigating the effect of parent-infant psychotherapy or TAU on outcomes for parents with mental health problems and their young infants. The mothers in the intervention condition showed a significant improvement in mental health at the end of the study compared to mothers that received TAU. There were no differences in infant development, parent-infant

interactions, infant attachment or parental RF. Given that the treatment focuses on these core aspects, the results of the trial could be related to methodological limitations rather than clinical implications. For instance, it was identified that 18% of those assigned to the treatment group received no sessions and 37% fewer than five sessions, which may have significantly reduced the ability to detect the treatment effects of the intervention. Furthermore, the sample was pooled from families experiencing social adversity and maternal mental health problems, and therefore could be a particularly challenging population to engage and sustain in treatment, specifically if required to travel to sessions. Indeed, a study examining targeted treatment that integrates parent-infant psychotherapy in a home-visiting program found that families in the intervention ($n = 60$) and control ($n = 45$) all remained in the study, and those with highest risk in the intervention group improved in parental RF, but there were no statistical significant differences between the intervention or control condition (Sadler, Slade, Close, Webb, Simpson, Fennie & Mayes, 2013). This study indicated accessible treatment offered to those most at risk of relational disturbance could benefit from interventions targeting parental RF.

While quantitative studies are undoubtedly important, qualitative studies uniquely complement them and provide an opportunity to examine processes of change that go undetected in large-scale quantitative studies and systematic reviews. For instance, Jones (2005) provided a case study of a parent-infant psychotherapy intervention with a traumatised mother and child and identified a process of change during therapy that occurred at the behavioural, unconscious and conscious level. Jones (2005) remarked there were significant moments when the mother was able to put words to her infant's distress and commented that although small examples, these moment were likely to have been crucial in the relationship. In other research, Baradon, Fonagy, Bland, Lénárd and Sled (2008) conducted a qualitative investigation of an

attachment based psychotherapeutic intervention in a mother and baby unit in a prison setting. The study conducted a grounded theory (GT; Glaser & Strauss, 1967) approach to analyse the content of participants PDIs before and after the intervention, and the analysis revealed vivid accounts of the parent's experiences and identified themes of idealisation, guilt, hopes, role reversal and anger. In particular, following the intervention, representational change was observed in the mothers' reflections of both positive and negative experiences with their infants. These qualitative studies provided significant insight into discrete but powerful processes of change in therapy, as well as offering rich descriptions from assessments that are commonly used to obtain statistical outcome measures.

Quantitative studies and systemic reviews have identified that it can be difficult to assess treatment effects on parental mentalizing. This appears to relate to methodological issues, attrition of participants, and perhaps an insensitivity of the measure in identifying significant changes in clinical groups. Moreover, it could be that parental mentalizing is a process that naturally develops over time in the relationship and therefore it is difficult to detect comparisons between intervention and control conditions. Qualitative studies provide an opportunity to examine the discrete nuances in the relationship and may be more appropriate when investigating the unique processes of change.

Relevance to Counselling Psychology

Counselling Psychology is strongly rooted in a relational stance and humanistic values (Jones Nielsen & Nicholas, 2016; Kasket, 2012). These values include an emphasis on understanding individuals' subjective and intersubjective experiences and understanding that humans are socially and relationally embedded beings (Cooper, 2009). Relational models are grounded in exploring how an individual understands

themselves and others and therefore attachment perspectives offer a model that enriches work within counselling psychology (Jordan, 2010, Rizq, 2010).

Counselling Psychologists have much to offer when working with children and their families. Qualitative research from the discipline has explored the process of working with children and families in a range of contexts, which include courts (Hammersley, 2010), adoption (Grotevant, 2003) and community settings (Georgopoulou, 2007). Empirical research in the disciplines is associated with qualitative designs that explore the therapeutic process of working with children and their parents (Jenkins, 2004; 2013; Puckering, McIntosh, Hickey & Longford, 2010). These studies offer valuable contributions as they offer findings that identify therapeutic processes that may not otherwise be captured in quantitative measures. Furthermore, the research identifies that Counselling Psychologists can work in a range of clinical settings with children and families, and therefore it seems relevant that the profession should apply their empirical skills and contribute to research to advance scientific and clinical enquiry.

As identified in the current literature review, the trajectory of infant attachment spans across the lifetime and can affect adult mental health (Moutsiana, et al., 2008) and psychosocial functioning (Bateman & Fonagy, 2008). Therefore, when working with adults, Counselling Psychologists could be in a position to facilitate an attachment through the therapeutic relationship to foster improved psychological wellbeing (Rizq, 2010). Indeed, both attachment focused and integrative modalities share the view that the therapeutic environment is akin to the secure base of attachment experience (Farber, Lippert & Nevas, 1995; Holmes, 2010). In peer-reviewed journals connected to Counselling Psychology, qualitative studies have examined how attachment patterns present in therapy. For instance, Daly and Mallinckrodt (2009) used a GT (Glaser & Strauss, 1967) approach to explore therapist's experiences of working with clients with

insecure attachments and found that the therapists considered the client's early experiences influenced the therapeutic alliance. In other research, Rizq and Target (2009) found through an interpretative phenomenological analysis (IPA; Smith & Osborn, 2003), that Counselling Psychologists found that the attachment to their personal therapist was an important vehicle to enhance reflective thinking. It seems relevant then that even if not working directly with children and their families, attachment theory could be one perspective that Counselling Psychologists integrate to understand that therapeutic process. Therefore, the concepts that apply to understand childhood attachment could remain relevant when working with adults (Innerhofer, 2013; Jordan, 2007; Lopez & Brennan, 2000).

Working with children and their parents is an important area of research and clinical enquiry. Early experiences can have a profound impact on an individual throughout their lifetime. It is essential that research and clinical practice continue to advance knowledge in understanding healthy development and how to support families in need by offering effective therapeutic intervention.

Aims of the Project.

The purpose of the study was to advance knowledge on implicit, embodied parental mentalizing in a clinical context. Current research indicates that improvements in parental RF in parent-infant psychotherapy compared to TAU are difficult to detect; however, it could be that implicit mentalizing is more sensitive to treatment effects. Therefore, the current study intended to provide findings that contribute to empirical research investigating the ways parental mentalizing develops the parent-infant relationship and identify how it can be enhanced through psychotherapeutic intervention.

The first part of the study applied a quantitative approach to examine whether parent-infant psychotherapy was more beneficial than TAU at increasing PEM. This was followed by further statistical analysis that explored the association between PEM and measures of parental representations, infant attachment, maternal mental health, child development and the parent-infant relationship. TA was conducted to investigate the processes that lead to changes in implicit and explicit mentalizing when improvements had been identified. The purpose of the qualitative analysis was to illuminate how embodied and verbal capacities developed over time and examine in what ways the nuanced processes affected the dyad.

Hypotheses

- Given that parent-infant psychotherapy was designed to support the parent-infant relationship, it is hypothesized that dyads that receive the intervention will report significant increases in PEM scores over a 6-month and 12-month period compared to TAU.
- As they measure the same construct, it is hypothesised that PEM will concurrently correlate significantly and positively with measures of explicit mentalizing.
- As mentalizing is proposed to underpin infant attachment, it is predicted that high PEM scores will concurrently correlate significantly and positively with secure attachment and negatively with disorganised attachment.
- It is predicted that PEM will concurrently correlate significantly and negatively with measures of poor maternal mental health. That is, as the severity of maternal mental health decreases, PEM scores will increase.
- The quality of parenting affects child development, therefore, it is predicted that PEM will concurrently correlate significantly and positively with measures of infant development (cognitive, language and motor). That is, increases in PEM

will be correlated with increases in cognitive, language, and motor development of the infant.

- Finally, as PEM assesses dyadic interactions it is predicted that PEM will concurrently correlate significantly and positively with measures of parent-infant interactions. That is high PEM scores will correlate with positive parent and infant behaviour.

TA sought to examine how implicit and explicit processes developed over time and explore in what ways this influenced the quality of the parent-infant relationship. The mixed-methods approach aimed to investigate how stronger relationships could be achieved in infancy, which could potentially lead to greater security, intimate relationships, and improved psychological wellbeing in the child and mother.

METHOD

Outline of the Original Study

Fonagy et al. (2016) conducted a randomised controlled trial to investigate the effect of parent-infant psychotherapy relative to treatment as usual in families experiencing high levels of social adversity and maternal mental health problems. Seventy-six mother-infant dyads were recruited and randomly allocated to either the intervention condition of parent-infant psychotherapy or the control condition of treatment as usual ($n = 38$ in each condition). Data was collected at three time points, Time 1 (T1), which was a baseline assessment prior to randomisation, Time 2 (T2), which was conducted six months post-baseline and Time 3 (T3), which was taken at 12 months post-baseline. Participants were assessed in relation to five domains: 1) maternal mental health; 2) child outcomes; (3) mother-infant interactions; (4) maternal representations and; (5) infant attachment. For a list of measures see Fonagy et al. (2016).

The trial took place in four sites in England that were identified as urban populations with diverse demographics and high levels of socio-economic deprivation. Health practitioners that were independent to the project referred participants to the study and a member of the research team provided participants with information about the project and screened for eligibility. Screening measures included the General Health Questionnaire (GHQ-12; D. Goldberg & Williams, 1988), the Test of Nonverbal Intelligence (TONI-3; Brown, Sherbenou, & Johnsen, 1997) and semi-structured interview (Appendix G). At the first appointment mothers were provided with an information sheet (Appendix F) and an opportunity to ask questions about the study. Baseline assessments were conducted prior to the families being randomly assigned to either parent-infant psychotherapy (intervention) or TAU (control) condition. To

participate in the study, all mothers signed a consent form and invited to sign consent to video form (Appendix E).

Inclusion criteria required that: the family was referred by a health professional independent to the study; the infant was less than 12 months old; mothers met probable psychiatric caseness based on the GHQ-12 ($>4/5$). Mothers were required to meet at least one of the following indicators of social exclusion: 1) less than 20 years of age; 2) low-income household; 3) long-term unemployment (more than 2 years); 4) unmarried or single; 5) childhood history of foster or institutional care; 6) social isolation associated with recent relocation; 7) previous diagnosis of nonpsychotic mental health illness; and 8) presence of chronic physical illness or disability. Maternal exclusion criteria were: 1) non-English speaking; 2) current psychosis; 3) drug dependence; and 4) IQ below 70. Infant exclusion criteria were: 1) any sensory or motor disability that would preclude their participation in the standard developmental assessment (e.g. blindness, hearing impairment, cerebral palsy) (Fonagy et al., 2016).

Once recruited, dyads were randomly allocated to the intervention (parent-infant psychotherapy) or control condition (TAU). A researcher independent to the project carried out treatment condition randomisation using an urn randomization algorithm including the following variables: 1) maternal age; 2) marital status and, 3) child's sex. A member of the research team then informed participants about their allocation (Fonagy et al., 2016). Participants in the control group received TAU from standard health and social care from primary and secondary care services that were required e.g. general practitioners, health visitors, counsellors and psychiatry. Dyads allocated to the intervention condition were offered parent-infant psychotherapy in addition to the standard health and social care services available to them. Participants were invited to attend sessions with one of six experienced parent-infant psychotherapists who were familiar with the model (Fonagy et al., 2016).

The Current Study

Research Design

The current study is a mixed-methods design and secondary analysis of data from Fonagy et al. (2016). The present study followed Creswell's (2014) explanatory sequential mixed-methods methodological and analytical framework as presented in Figure 1.

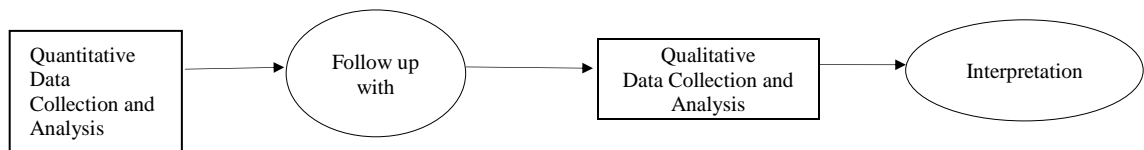


Figure 1. Explanatory sequential mixed-methods design (Creswell, 2014).

The first aim was to investigate the effect of parent-infant psychotherapy compared to TAU on parental implicit mentalizing as measured by PEM. Mother-infant free play interactions had been recorded at T1, T2, and T3 (Fonagy et al., 2016) and then video-footage of the interactions were coded for PEM. A further aim of the study was to gain deeper insight into the process of mentalizing over time, and a qualitative analysis was conducted using a subsample of participants' observational data from the PEM assessment and the full transcripts from the PDI. TA was applied to the data to identify the process of change in implicit (embodied) and implicit (reflective) parental mentalizing from T1 to T3 (e.g. over a 12-month period).

Philosophical Implications

Epistemology. A paradigm is a shared belief system that shapes the social research (Morgan, 2007). Paradigms are considered to fundamentally influence the ontological and epistemological assumptions, the methodological approach and methods used in the study (Guba & Lincoln, 1994). The current study is positioned

from a realist paradigm and aims to provide generalizable and accessible findings transferable to clinical practice (Willig, 2012). , Greene and Hall (2010) state that realism offers a philosophical stance that is compatible with both quantitative and qualitative approaches. It has also been suggested that realism supersedes alternative positions, as individual perspectives and situations are considered real and separate phenomena (Maxwell & Mittapalli, 2010). Although Counselling Psychology emphasise concepts of reflexivity and subjectivity rooted in phenomenological paradigms, the profession also invites exploration of diversity and difference (Crotty, 1998; Cutts, 2007; Davy, 2010). Rather than aligning to phenomenological models alone, McAteer (2010) argues that Counselling Psychology philosophical values are embedded in pluralistic perspectives, in which the discipline engages with various modalities and practice. Cooper and McLeod (2007) further suggest that pluralism can provide an open standpoint that encourages conceptualising and learning from different frameworks, and encourage moving away from narrow unitary models that could limit understanding and exploration. In relation to research, Cooper (2009) considers that rather than contradicting Counselling Psychologist traditional phenomenological principles, quantitative empirical research could be considered to encapsulate the disciplines values and commitment to welcoming other perspectives to challenge pre-existing assumptions. Phenomenological methods are embedded in Counselling Psychology, and orientated within a pluralistic stance that encompasses diversity in general. It is within such a stance that the realist position adopted in this research fits with the values of Counselling Psychology.

Mixed-methods. A mixed-methods design was conducted so that a quantitative analysis could identify if PEM capacity was affected by parent-infant psychotherapy compared to TAU. Furthermore, statistical analysis enabled an

exploration of *what* ways embodied processes were associated with outcomes for the parent and infant. TA enhanced the findings by examining *how* mentalizing developed to enable deeper insight into the mechanisms underlying explicit and implicit processes and the influences on the dyad.

Throughout the literature, scholars debate the philosophical, theoretical, methodological, analytical and practical applications of mixed-methods research (e.g. Cameron, 2011; Onwuegbuzie & Johnson 2006; Teddlie & Tashakkori, 2009). The literature in this area is coloured by words such as “controversies” (Creswell, 2011 p. 269), “barriers” (Bryman, 2007, p. 8), “death” (Symonds & Gorard, 2008, p. 1) and “war” (Tashakkori & Teddlie, 1998, p. 3). In contrast to these debates, there are philosophical positions that invite difference. For example, Counselling Psychology values integration as it is assumed to acknowledge the diversity in the world and facilitate engagement in a vast array of perspectives in practice and research (Cooper & McLeod, 2007, Cutts, 2007, Kaskett & Gil-Rodriguez, 2011; McAteer, 2010). The study intended to adopt an integrative approach and to conduct mixed methods to appropriately engage with the research question (Greene & Hall, 2010; Madill & Gough, 2008; Yardley & Bishop, 2008). The project is a mixed-methods investigation of a multifaceted process associated with individual and relational outcomes, therefore is an integrative design and topic that could be well positioned in Counselling Psychology.

Participants

Participant data was gained from Fonagy et al. (2016) study. Seventy-six participants consented to take part in the original study, but six participants in the control group and four participants in the treatment group did not consent to be video recorded, and one dyadic interaction could not be coded for PEM. Thus, a total of sixty-

five dyads were included in the current study. Reasons for referral were maternal mental health difficulties (100%), mother and infant attachment bonding difficulties (27.7%), domestic abuse of marital problems (12.3%), maternal physical problems including (4.6%), social problems including loneliness, isolation, lack of family support and financial and social problems (18.5%), bereavement of trauma (6.2%).

Quantitative analysis. The demographic characteristics of the intervention and control groups are presented in Table 1.

Qualitative analysis. A subsample of four participants was selected for TA. These cases were found to improve by two scores of both PDI RF and PEM from T1 to T3 and their baseline characteristics are presented in Table 2.

Inclusion and exclusion criteria. Participants were required to meet inclusion and exclusion criteria outlined above as part of the original study (Fonagy et al., 2016). For the current study, inclusion criteria required that participants had consented to be filmed during a free-play mother infant interaction. Exclusion criteria were: 1) poor video-footage quality that could not be adequately coded for PEM; 2) the entire interaction could not be coded under the PEM coding scheme and; 3) the coder knew the family. No exclusion criteria were met in the present study and the flow of participants through is presented in Figure 2.

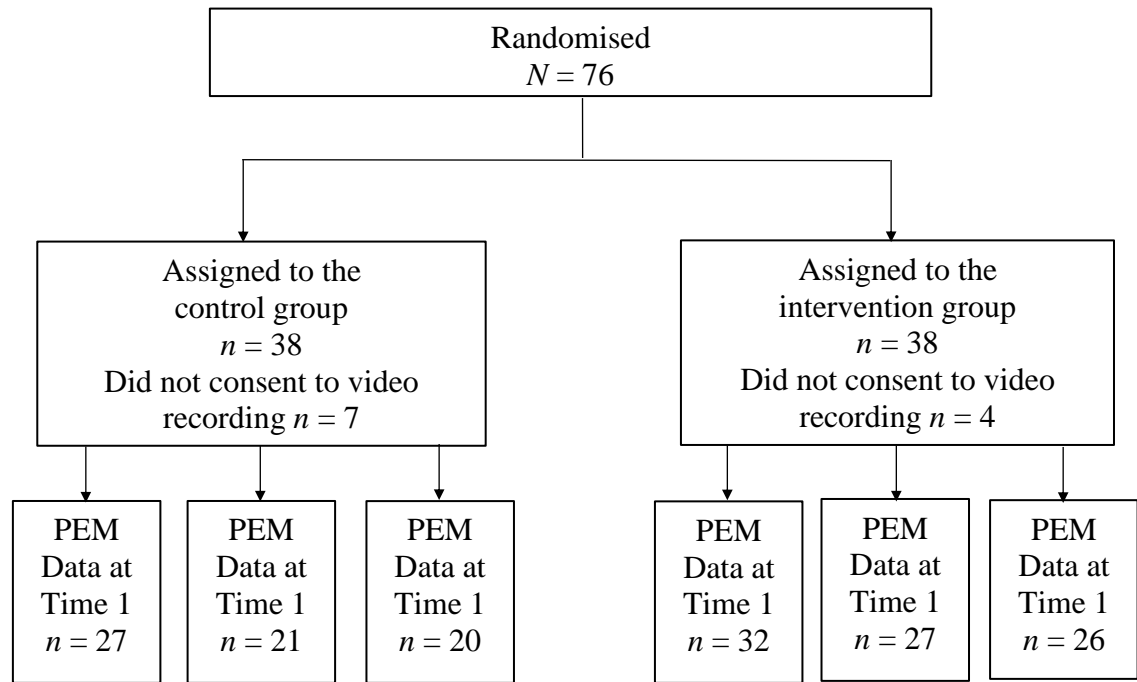


Figure 2. Number of Parental Embodied Mentalizing assessments at each time point.

Measures

For the current study, the present author coded PEM on all video-footage of consenting dyads available at T1, T2 and T3.

Implicit mentalizing

Parental Embodied Mentalizing (PEM; Shai & Belsky, 2011a). PEM is an observational measurement tool that “(a) assesses the parent’s capacity to implicitly conceive, comprehend and extrapolate the infant’s mental state from the whole-body kinesthetic expression of the baby, and (b) the parent’s ability to adjust their own kinesthetic patterns accordingly” (Shai & Belsky, 2011a, p.173). PEM attempts to capture aspects of the parent-infant non-verbal interaction by identifying embodied circles of communication (ECCs). Raters are trained to code and describe the non-verbal dyadic interaction in terms of the quality of the kinesthetic movement. Each ECC is given a PEM score ranging from 1 (very low) to 9 (very high). After the entire tape is

coded, raters assign a global PEM score using the same nine-point scale based on the full set of ECC events (see pages 52-53 for overview and Appendix H).

The following are a subsample of measures extracted from the original study and used in the current project (Fonagy et al., 2016). See Appendix I for additional information.

Maternal representation

The Mother's Object Relations Scales (MORS; Oates, Gervais, Danis, Lakatos Davies, 2006). The MORS was collected at T1, T2 and T3 and is a self-report measure for quantitatively assessing core features of mothers' internal working models of their infants. The short form is comprised of 14 items and fall into two dimensions of mothers' representations of their infant: Warmth and invasion. Sleet, Baradon and Fonagy (2013) cite that Oates, Gervai, Danis, Lakatosb, and Davies (submitted for publication) found MORS to demonstrate adequate discriminant validity and concurrent validity and adequate internal consistency and test-retest reliability.

The Parental Development Interview Revised, Short Version (PDI; Slade et al., 2004). The PDI was collected at T1 and T3 only.

The PDI is a semi-structured interview that taps into parental representations of themselves as parents, their child and the relationship. Questions are designed to capture parents' understanding of their own and their child's thoughts, feelings and behaviours. Interviews were transcribed verbatim and coded by trained raters on two coding systems.

Reflective Functioning (RF; Fonagy, et al., 1998). RF was used to code the parental autobiographical narratives generated from the PDI. RF is a coding system that rates the parent's capacity to hold the child in mind and to consider the child as an intentional being. Interviews are scored on an 11-point scale from -1 to 9, with higher

scores reflecting higher RF. A score of –1 indicates negative RF and includes violation of coherence (bizarre) or openly hostile responses. Higher scores indicate a greater degree of insight into the typical mental function of the infant in addition to a greater understanding of the interaction between the mother’s mental states and her understanding of the child’s experience. A score of 9 indicates exceptional RF with rich and full reflections. RF has been reported to demonstrate adequate construct, predictive and discriminant validity and adequate inter-rater reliability (Fonagy et al., 1998).

Assessment of Representational Risk (ARR; Sled, 2013). The ARR is a coding and scoring system also used on the parental narratives on the PDI. ARR assesses qualities of caregiver representations, which are prevalent in less optimal caregiving. It consists of 10-items using three subscales: Hostile, helpless and narcissistic representations. ARR scores have been found to discriminate between normative and clinical groups and demonstrated concurrent validity of self-reported maternal attachment (Sled, 2013).

Infant attachment. This was measured at T3 only (note: infant attachment assessed with children aged one year and above).

The Strange Situation Procedure (SSP; Ainsworth, et al., 1978). The SSP was used to assess the child’s attachment behaviour to their mother. SSP is a standardized laboratory procedure involving a series of separations and reunions between the mother and infant. The procedure was videotaped and coded by a trained and reliable coder who was independent of the project and blind to treatment assignment. The infant attachment behaviour was rated and classified as either secure, insecure-avoidant, insecure-resistant or disorganized. Attachment classifications on the SSP have demonstrated good test-retest reliability (Waters, 1978). Attachment security on the SSP has been found to be predictive of positive outcomes for the child and into adulthood

(Bosquet & Egeland, 2006; Sroufe, 2005), and infants classified with disorganised attachment have been found to be predictive of socio-emotional difficulties in later life (Carlson, 1998; Dutra, Bureau, Holmes, Lyubchik, & Lyons-Ruth, 2009).

Maternal mental health. All measures of maternal mental health were assessed at T1, T2 and T3.

The Center for Epidemiological Studies Depression Scale (CES-D; Comstock & Hesling 1976; Radloff, 1977). The CES-D measures depressive symptoms developed by the Center for Epidemiologic Studies at the National Institutes of Mental Health. It is a 20-item self-report questionnaire that asks the individual to rate how they have felt over the last hour on a range from 0 (*rarely or none of the time*) to 4 (*most or all of the time*). High internal consistency reliability, acceptable test-retest stability, and good construct validity in both clinical and community samples have been found (Radloff, 1977; Weissman, Sholomskas, Pottenger, Prusoff & Locke, 1977).

The Brief Symptom Inventory (BSI; Derogatis, 1993). The BSI is a 53-item self-report measure of psychopathology that asks the individual to rate their distress over the past seven days on a five-point scale range from 0 (*not at all*) to 4 (*extremely*). The BSI has been shown in clinical studies to be a reliable and valid measure of current global psychological distress and has demonstrated sensitivity to many forms of treatment, as a well as to clinically significant changes in stress and distress levels (Derogatis, 1993; Derogatis & Savitz, 2000).

Parenting Stress Inventory Short Form (PSI; SF; Abidin, 1995). The PSI is a 36-item questionnaire that measures stress level experienced within the parenting role. The PSI: SF is a valid measure that has been found to be internally consistent and correlated to parental wellbeing and parent-child interactions (Haskett, Ahern, Ward, Allaire, 2006).

Maternal Sense of Mastery (MMS: Mastery Scale, Pearlin & Schooler, 1978). The Self-Mastery Scale ask participants to respond to the extent that they feel some control over their life's chances, as opposed to feeling ruled by fate rated on a seven-point scale, with higher scores indicative of higher sense of mastery. Pearlin and Schooler (1978) report test-retest correlations of .44, and reported alpha reliability coefficients are between .75 and .77 (Sadler, 1997; Scheier, Carver, & Bridges, 1997)

Child measure. This measure was carried out at T1, T2 and T3.

Bayley Scales of Infant Development, Third Edition (BSID-III; Bayley, 2006).

The BSID-III is an assessment-based measure that evaluates a child's cognitive, language and motor functioning. The BSID-III can be used with infants and children aged between 1 and 42 months and are administered by a trained and experienced evaluator. Bayley (2006) reports excellent split-half reliability (between .71 and .97) and internal consistency (between .74 and .99) and adequate test-retest reliability (between .69 and .86). Studies have shown good concurrent validity with other measures of physical and cognitive functioning (Provost, Crowe, & McClain, 2000; Voigt, Brown, Fraley, Liorente, Rozelle, Turcich, Jensen & Heird, 2003).

Mother-child relationship measures. Measurements used to assess the quality of the mother-infant interactions are based on video-footage of parent-infant interactions. The researcher asked the parent to “spend time with your baby as you usually would” and filmed a ten minute free-play interaction and carried out at T1, T2 and T3.

Emotional Availability Scales (EAS; Biringen, et al., 1993). The EAS was used to assess the video-recorded dyadic interaction for the emotional availability of the parent to child and child to the parent. Emotional availability refers to a person's ability

to express their emotions and to perceive and respond to the emotional needs and goals of another (Emde, 1980). EAS has been shown to have good concurrent validity with infant attachment classifications, high levels of sensitivity correlate with secure attachment classifications (Koren-Karie et al., 2002; Ziv, Aviezer, Gini, Sagi, & Koren-Karie, 2000) and early secure attachments predicting greater emotional availability over time (Easterbrooks, Biesecker, & Lyons-Ruth, 2000).

Coding Interactive Behavior (CIB; Feldman, 1998). CIB rating scales were used to code the video-recorded parent-infant interactions. The CIB scales are comprised of 45-items that are rated on a 5-point scale for the frequency and intensity that the behaviour is observed (22-items relating to parental behaviour, 16-items relating to the child's behaviour, and five items relating to the quality of dyadic interaction as a whole). The CIB has been reported to demonstrate adequate construct and predictive validity and test re-test reliability (Dollberg, Feldman & Keren, 2010).

Ethical Considerations

The University of East London Research Ethics Committee (REC) granted ethical approval of the current study (Appendix A). The National Health Service REC (Reference: 05/Q0511/47) granted ethical approval of the original study (Appendix B). The principal investigator of the original study granted permission for secondary data analysis along with procedures for ensuring safeguarding the data (Appendix C) and a confidentiality agreement of was signed (Appendix D). Participation in the original research was voluntary and written consent was obtained for all mothers who participated in the study (Appendix E).

Data Analytic Plan

PEM coding. The first stage of the project required the author to code the full sample for PEM. A colleague independent to the study anonymised the video data so that the author was blind to the time point and treatment condition. PEM coding adhered to the PEM protocol (Shai, 2013). The coding system is designed to capture the extent to which parental mentalizing capacities unfold in the parent-infant interaction. The video recording is played on mute mode to avoid the potential influences that verbal input may have on evaluating the kinesthetic interaction. The video is run on normal speed, but frequently paused and played back to view the interaction frame-by-frame. Using a coding sheet (Appendix I) a five-step coding approach was followed to assess PEM:

1. *Identify the Embodied Circle of Communication.* ECCs are exchanges of mental states that take place between the parent and infant.
2. *Delineate the kinesthetic qualities of each step of the ECC.* Once an ECC has been identified it is considered through a kinesthetic lens. These kinesthetic qualities are: ‘directionality’, ‘pacing’, ‘pathways’, ‘tension-flow’, ‘tempo’ and ‘space’.
3. *Classify the theme of an ECC.* Once an ECC has been identified, it is classified into one of four themes. These are, ‘embodied support’, ‘body ownership’, ‘transitions’ and ‘promoting exploration’. Where applicable, ECC events are further classified into a subtheme. There are two subthemes for embodied support, ‘sculpting’ and ‘holding’ and three subthemes for body ownership, ‘investigation’, ‘stimulation’ and ‘manipulation’.
4. *Assign each ECC a PEM score.* Once an ECC has been classified according to type, it is rated using a nine-point PEM score from 1 (very low) to 9 (very high).

The PEM score reflects the degree to which the parent expresses responsiveness to the infant's kinesthetic manifested mental states.

5. *Assign a global PEM score after assessing all ECC events.* Based on the full set of events, raters assign a global PEM score for the entire parent-infant interaction using the same nine-point PEM score from 1 (very low) to 9 (very high).

Planned primary analyses to evaluate differences in parental embodied mentalizing by group. After PEM coding was complete and inter-rater reliability achieved (see page 54.) quantitative analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 22.

The first component of the project involved establishing if the control and intervention groups were matched on baseline characteristics. T-tests for continuous variables and chi-square tests for categorical variables were used to assess differences between the control and intervention group in baseline demographic information, in the participants who were assessed for PEM at any time point. Any variables that were found to significantly differ between the groups were included as covariates in analysis.

To examine whether parent-infant therapy was more effective than TAU at increasing PEM across the 12-month study period, a series of three repeated measures analysis of covariance models (RM-ANCOVA) were run which compared PEM scores by condition (control vs. intervention) and time (T1 to T3, T1 to T2 and T2 to T3), including a condition*time interaction. The RM-ANCOVA statistical test was used as the same participants were measured at each time point (measures were repeated) and it enables covariates to be included in the model (temporary/over crowded accommodation was controlled for, as well as baseline PEM scores when looking at T2 to T3 changes). Furthermore, as this was an exploratory investigation of PEM over

time, a series of three RM-ANCOVAs were conducted to examine the variation in PEM scores throughout different time points.

Planned secondary analyses to examine the relationship between parental embodied mentalizing with measures of parental representations, infant attachment, maternal mental health, infant development, parent-infant relationships. Inter-correlations were conducted in the entire sample (not separately for each group) using the Pearson correlation coefficient to examine the relationship between PEM and mother and infant variables. At T1, the relationship between variables was investigated using bivariate correlations, and partial correlations controlling for group (intervention vs. control) were conducted for T2 and T3 measures to eliminate any confounding influence the treatment had on the outcome variables.

Planned qualitative analysis to explore the process of change in implicit and explicit mentalizing. TA was chosen as a qualitative method to explore how parental implicit and explicit mentalizing changed over time. TA is an approach that organises, identifies, analyses and reports themes in data (Braun & Clarke, 2006; Clarke & Braun, 2013). This technique describes and interprets patterns and is a method that can provide insight into both *what* and *how* elements changed over time. TA uses independent tools for analysing qualitative data and therefore allows different types of data to be collected and analysed. The flexible method allows an integration of data from both written observational notes and transcripts of verbal narratives into a single analysis.

The theoretical decisions posited by Braun and Clarke (2006) guided the TA methodological choices. An inductive bottom up data driven analysis was applied, which denotes that analysis was based on the data and not on an existing framework. To provide rich descriptions of elements of change, themes were counted if they were

prevalent across the dataset. These themes were identified at a semantic level, which meant that data was described and organised to provide a broader meaning of the findings. The TA procedure followed the Braun and Clarke (2006) the diagrammatic process is presented in Appendix J.

The qualitative analysis aimed to investigate the process of change in implicit and explicit mentalizing over a 12-month period. It was decided with the supervisory team that any dyad that improved by two scores on both PEM and RF from T1 to T3 would be appropriate to explore the process of change in parental mentalizing. For the cases met this criteria, data from the PEM assessment and PDI were extracted for TA.

Observational notes of the moment-to-moment dyadic interaction from the PEM coding sheet and the full transcript of the mother's responses to all questions on the PDI were investigated following the TA process (Braun & Clarke, 2006). Participants' data was analysed individually and TA was conducted in four stages. Figure 4 illustrates the TA procedure and examples from each stage are presented in Appendix J.

- Stage 1: PEM T1+T3 data was combined together read and re-read to produce initial codes and this process was replicated for the PDI T1+T3 data. T1 and T3 data was combined so the implicit nonverbal (PEM) and explicit verbal processes (PDI) could be explored over time. This was repeated for all four dyads.
- Stage 2: Codes from PEM were brought together into a thematic map (TM) and this was repeated for PDI data. TMs conceptualised the separate implicit and explicit processes for each dyad.
- Stage 3: TMs generated from the PEM and PDI data were combined and analysed to produce combined TM. This analysis brought together the patterns of implicit and explicit process and was repeated for each dyad.

- Stage 4: TMs from each dyad was combined into a final TM to produce an overall accurate reflection of the patterns and meaning of the data as a whole.

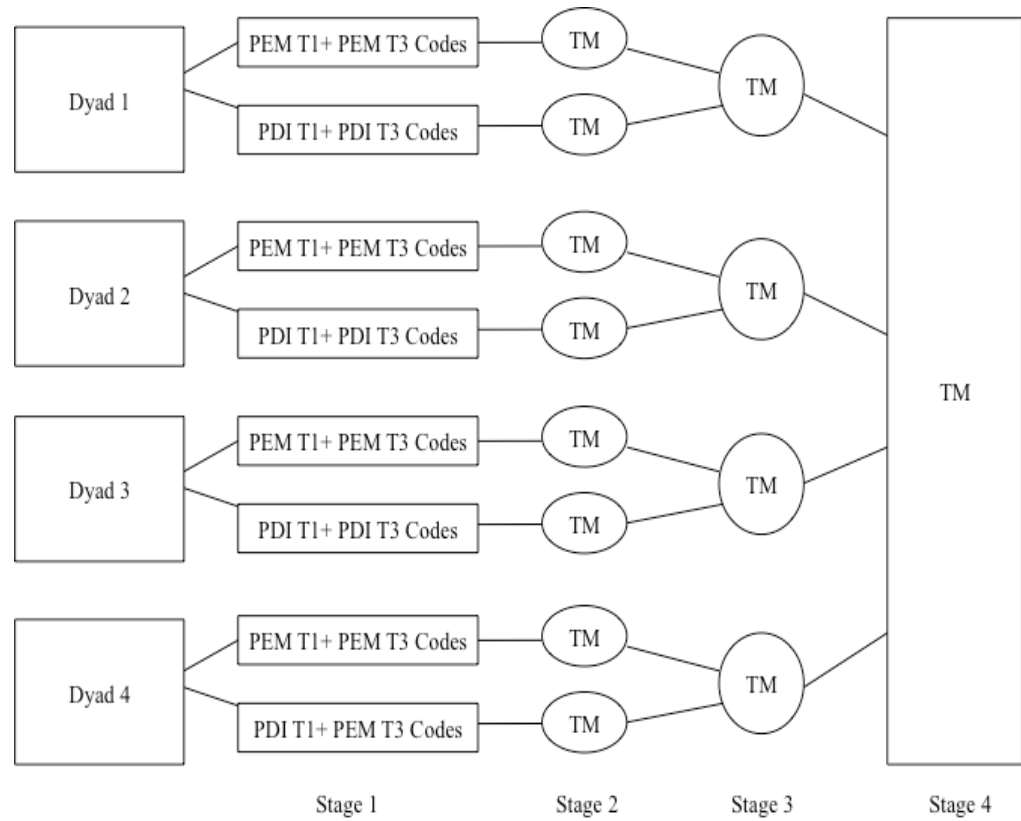


Figure 3. Thematic analysis procedure

PEM: Parental Embodied Mentalizing

PDI: Parent Development Interview

TM: Thematic Map

T1: Time, 1 baseline

T3: Time 3, 12-month follow-up

Reliability

PEM coding. The author had been trained by Shai in 2010 and was a reliable PEM coder (see Appendix K).

PEM inter-rater reliability (IRR). Observational data scoring on the PEM assessment required a second trained and reliable PEM coder to rate a random 20% of the sample. Testing IRR of PEM involved examining the global PEM, length of ECCs and number of ECCs and required 80% agreement between the primary and secondary coder. Since these are continuous variables, an absolute agreement Intraclass

Correlation Coefficient (ICC) model was used and IRR was achieved of global PEM ($ICC = .812$), length of ECCs ($ICC = .80$) and number of ECCs ($ICC = .96$).

Furthermore, PEM coding was discussed with colleagues using PEM in their studies. These forums provided a space for reflections and promoted congruence to the PEM protocol and reflexivity of analysis.

Triangulation on qualitative analysis. To facilitate verification of data analysis for both PEM and PDI data, a second colleague independent to the study reviewed the author's codes and maps and themes were carefully discussed to ascertain the correspondence of the data to the codes.

Validity

Quantitative. As PEM was examined with theoretically similar variables, this study could assess convergent validity of the measure.

Qualitative. To validate qualitative findings, the reporting of the TA procedure was transparent and grounded to make each stage explicit. Sufficient extracts were reported to demonstrate the relationship between the data and the theme.

RESULTS

Baseline demographics for participants who were assessed for PEM at any time point ($n = 65$) are presented in Table 1 by study condition (control, intervention). A significant difference between the control and intervention group was observed for temporary/ over crowded accommodation, $\chi^2(1) = 3.96, p = .05$, such that significantly more participants in the intervention group ($n = 13, 38\%$) reported living in temporary/over crowded accommodation compared to the control group ($n = 5, 16\%$). Therefore, temporary/over crowded accommodation was included as a covariate in the primary analyses. No other significant differences on baseline demographic variables were observed between the control and intervention groups, indicating that at baseline the two groups were well matched. Qualitative subsample basic demographics are presented in Table 2

Table 1

Baseline demographic characteristics for participants in the intervention and control group

Variable	Control condition (<i>n</i> = 31)			Intervention condition (<i>n</i> = 34)			Significance tests	
	Range	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	<i>t(df)</i>	<i>p</i>
Maternal age (years)	19-42	31.94	5.92	21-41	30.68	5.67	.87 (61.8)	.39
Infant age	.6-11	3.40	2.95	.5-11	3.88	3.19	-.64 (63)	.53
	<i>n</i>	%		<i>n</i>	%		χ^2 (<i>df</i>)	<i>p</i>
Infant gender (male)	21	68%		22	65%		.07 (1)	.81
Maternal Ethnicity: White	18	58%		23	68%		.64 (1)	.42
First time mother	20	65%		24	71%		.27 (1)	.60
Mother's higher education	19	61%		12	35%		.20 (1)	.17
Maternal social exclusion criteria:								
Low income household	12	39%		19	56%		1.92 (1)	.17
Long-term unemployment	7	23%		8	24%		.01 (1)	.93
Temporary/crowded accommodation	5	16%		13	38%		3.96 (1)	.05
Single-parent household	11	36%		12	35%		.00 (1)	.46
Chronic illness or disability	2	7%		4	12%		.55 (1)	.33
Childhood foster / institutional care	0	0%		1	3%		.95 (1)	.19
Social isolation / recent relocation	8	26%		14	41%		1.71 (1)	.13
<20 years of age	2	6.5%		0	0%		2.3 (1)	.13
Previous diagnosis of psychiatric illness	20	65%		23	68%		.07 (1)	.81
	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>			
No. social exclusion criteria met	2.16	1.24		2.76	1.42		12.3 (6)	.06
Maternal nonverbal IQ	107.32	12.13		102.58	10.66		1.63 (60)	.11
Maternal GHQ score	13.74	5.83		12.91	6.39		.55 (63)	.59

Note: Demographics for participants who had been assessed for PEM at any time point. GHQ = General Health Questionnaire.

Table 2.

Basic baseline demographic characteristics for qualitative subsample

	Range	<u>Control and intervention</u>	
		(<i>n</i> = 4)	
		<i>Mean</i>	<i>SD</i>
Maternal age	30.05 - 41.75	35.10	5.22
Infant age	1.77 - 2.50	2.27	.341
Infant gender (male)	-	50%	-
No. social exclusion criteria met	2	2	.000

Research question 1: Is parent-infant therapy more effective than treatment as usual in enhancing PEM over time?

A series of RM-ANCOVAs were conducted to examine differences in PEM scores by time, condition (control vs. intervention), and the interaction of condition*time. Means and standard deviations for PEM scores at each time point and by condition, along with the significance of the test results, are presented in Table 3. The bonferonni test was applied for multiple comparisons using the adjusted alpha rate of .017 (e.g., .05/3) to control for the effect of multiple comparisons (Gelman, Hill & Yajima, 2012).

The first RM-ANCOVA examined change in PEM over time from T1 to T2 to investigate whether the intervention had an effect on PEM ratings. Analyses revealed no main effects of treatment group ($F(1,39) = .001, p = .98$) overtime ($F(1,39) = .419, p = .521$), and no condition*time interaction from T1 to T2 ($F(1,39) = 3.31, p = .08$).

The second RM-ANCOVA looked at change in PEM from T1 to T3. Analyses revealed that, unlike the shorter time period (T1 to T2), there was a significant effect of time in global PEM score from T1 to T3, ($F(1,39) = 29.11, p < .001$, such that PEM ratings (irrelevant of group) increased from T1 ($M = 3.49, SD = .86$) to T3 ($M = 4.59, SD = 1.01$) was no main effect of treatment group ($F(1,39) = .70, p = .41$) and there was no condition*time interaction from T1 to T3 ($F(1,39) = 1.69, p = .20$) indicating that treatment did not significantly effect global PEM ratings from T1 to T3.

The third RM-ANCOVA examined change in PEM from T2 to T3, controlling for PEM at T1. The increase in PEM across this time period was not significant ($F(1,30) = 3.56, p = .06$), and there was no significant main effect of group ($F(1,30) = .63, p = .43$) and there was no condition*time interaction from T2 to T3, $F(1,30) = 1.36, p = .22$.

Research question 2: Is PEM associated with measures of maternal mental health, infant development, parent-infant relationships, parental representations and infant attachment

To examine the strength of the relationship between PEM at T1 and measures of parental representations, maternal mental health, infant development and parent-infant relationship at T1, bivariate correlations were conducted. The relationship between the measures at T2, and measures taken at T3 were examined with partial correlations, controlling for treatment group (intervention versus control), to remove any confounding influence the intervention had on the outcome variables. Significant differences were found at baseline between the two groups in temporary/crowded accommodation, however as correlations were not investigating treatment effects this variable was not controlled for. Correlations are presented in Table 4 to 8. Correlations approaching $r = 1.00$ (or greater than $r = .50$) indicate strong positive relationships between variables and correlations approaching $r = -1.00$ (or less than $r = -.05$) means there are strong negative correlations between the measures (Prashanti, 2014).

Table 3

Means, standard deviations, and results of repeated measures analyses of covariances significance tests of PEM scores overtime by condition

PEM	<u>Group effect</u>						<u>Time effect</u>				<u>Effect of time and group</u>		
	Control	Intervention	<i>M (SD)</i>	<i>F</i>	<i>p</i>	η^2	<i>M (SD)</i>	<i>F</i>	<i>p</i>	η^2	<i>F</i>	<i>p</i>	η^2
Time 1	(<i>n</i> = 27) 3.4 (.80)	(<i>n</i> = 32) 3.5 (.92)											
Time 2	(<i>n</i> = 21) 3.7 (1.1)	(<i>n</i> = 27) 3.5 (.89)											
Time 3	(<i>n</i> = 20) 4.5 (1.0)	(<i>n</i> = 26) 4.5 (1.03)											
Time 1- Time 2	(<i>n</i> = 17)	(<i>n</i> = 25)	3.38 (.91) 3.52 (.97)	.001	.98	.04	3.51 (.143) 3.55 (.154)	.42	.52	.011	3.31	.08	.08
Time 1- Time 3	(<i>n</i> = 17)	(<i>n</i> = 25)	3.49 (.86) 4.59 (.1.01)	.70	.41	.02	3.46 (.134) 4.60 (.160)	29.11	<.001	.43	1.69	.20	.04
Time 2- Time 3	(<i>n</i> = 15)	(<i>n</i> = 23)	3.56 (.93) 4.53 (.98)	.63	.43	.02	3.59 (.155) 4.45 (.163)	3.75	.06	.11	1.36	.25	.04

PEM= Parental Embodied Mentalizing.

Note: Time 1 = baseline; Time 2 = 6 month follow-up; Time 3 = 12 month follow up.

PEM Time 2-PEM Time 3 analyses controlled for PEM at T1.

All analyses controlled for temporary/overcrowding accommodation

Table 4

Intercorrelations between Parental Embodied Mentalizing and measurements of parental representations

Measure	<u>Time 1</u> <i>n</i> = 51		<u>Time 2</u> <i>n</i> = 39		<u>Time 3</u> <i>n</i> = 37	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Reflective Functioning (RF)	.08	.47	-	-	.11	.52
Mother Object Relations Scale (MORS)						
Invasion	.04	.81	-.08	.61	-.23	.13
Warmth	-.12	.39	-.13	.42	.204	.21
Assessment of Relational Risk (ARR)						
Hostile	-.14	.32	-	-	-.11	.56
Helplessness	-.09	.53	-	-	.07	.68
Narcissistic	-.35	.01	-	-	.14	.40

Note: Time 2 and Time 3 controlled for treatment group
RF and ARR not assessed at Time 2.

Table 4 shows correlations between PEM and measurements of parental representations. At T1 PEM showed a significant negative correlation with the ARR narcissistic subscale at T1 ($r = -.35$ $p = .01$). There were non-significant correlations between PEM and parental representations at all other time points.

Table 5

Partial correlations between PEM and infant attachment at Time 3

Measure	<i>n</i>	<u>Time 3</u>	
		<i>r</i>	<i>p</i>
Secure	38	.15	.33
Disorganized	8	.04	.81

Note: Controlled for group.

Table 5 shows that there were non-significant correlations between PEM at T3 and infant secure and disorganised attachment.

Table 6

Intercorrelations between Parental Embodied Mentalizing and maternal mental health

Measure	<u>Time 1</u>			<u>Time 2</u>			<u>Time 3</u>		
	<i>n</i>	<i>r</i>	<i>p</i>	<i>n</i>	<i>r</i>	<i>p</i>	<i>n</i>	<i>r</i>	<i>p</i>
Center for Epidemiological Studies Depression Scale (CES-D)	53	-.21	.14	37	-.31	.06	39	-.41	.01
Brief Symptom Inventory (BSI)	50	-.11	.46	37	-.19	.26	39	-.30	.06
Parenting Stress Inventory: Short Form (PSI:SF)	52	-.03	.86	37	-.14	.40	39	-.28	.08
Maternal Sense of Mastery (MMS)	49	.22	.12	37	-.17	.32	39	.21	.19

Note: All correlations were between PEM and the outcome measure taken at the same time point (e.g. PEM at Time 1 and CES-D Time 1, PEM at Time 2 and CES-D at Time 2).

Bivariate correlations were used at Time 1 and Partial correlations at Time 2 and Time 3 controlling for treatment group.

Correlations between PEM and measures of maternal health are shown in Table 6. At T1, non-significant correlations were observed between PEM and all measures of maternal mental health. This was also found at T2, although there was a marginally significant negative correlation between PEM and CES-D at this time point ($r = -.31$, $p = .06$). At T3 there was a negative correlation between PEM and CES-D ($r = -.41$, $p = .01$), and also a marginally significant negative correlation between PEM and BSI ($r = -.30$, $p = .06$).

Table 7

Intercorrelations between Parental Embodied Mentalizing and infant development

Measure	Time 1 (n = 59)		Time 2 (n = 45)		Time 3 (n = 43)	
	r	p	r	p	r	p
Bayley Scales of Infant Development (BSID III)						
Cognitive scale	.05	.72	-.08	.59	.18	.25
Language scale	.09	.45	-.12	.43	-.15	.32
Motor scale	.07	.58	-.97	.65	-.19	.20

Note: Time 2 and Time 3 controlled for treatment group.

Table 7 shows correlations between PEM and infant development. There were non-significant correlations between PEM and infant development at all time points.

Table 8

Intercorrelations of Parental Embodied Mentalizing and parent-infant relationship measures

Measure	Time 1 (n = 59)		Time 2 (n = 45)		Time 3 (n = 43)	
	r	p	r	p	r	p
Emotional Availability Scale (EAS)						
Maternal sensitivity	.27	.04	.31	.03	.47	.001
Maternal structuring	.28	.02	.27	.07	.32	.001
Maternal non-hostility	.31	.02	.31	.03	.38	.01
Maternal non-intrusiveness	.35	.01	-.04	.77	.24	.11
Child involving behaviour	.22	.04	.17	.26	.27	.07
Child responsiveness	.24	.07	.263	.07	.29	.06
Coding Interactive Behaviour (CIB)						
Dyadic attunement	.36	.01	.37	.01	.35	.02
Parent positive engagement	.22	.09	.45	.002	.47	.001

Note: Time 2 and Time 3 controlled for treatment group.

Table 8 shows correlations between PEM and parent-infant relationship measures. At T1, significant correlations were observed between PEM and the maternal subscales of the EAS; maternal sensitivity ($r = .27, p = .04$), maternal structuring ($r = .28, p = .02$), maternal non-hostility ($r = .31, p = .02$) and maternal non-intrusiveness ($r = .35, p = .01$), however these correlations were weak. There was a significant but weak

correlation between PEM and CIB dyadic attunement subscale at this time point ($r = .36, p = .01$).

At T2 PEM showed significant correlations with the EAS subscales of maternal sensitivity ($r = .31, p = .03$) and maternal non-hostility ($r = .31, p = .03$), and significant correlations with CIB subscales, dyadic attunement ($r = .37, p = .01$) and parent positive engagement ($r = .45, p = .002$).

Finally, at T3 there were significant correlations between PEM and EAS subscales of maternal sensitivity ($r = .47, p = .001$) and maternal structuring ($r = .32, p = .001$) and maternal non-hostility ($r = .38, p = .01$) and CIB subscales dyadic attunement ($r = .35, p = .02$) and parent positive engagement ($r = .47, p = .001$). Only at T3 did PEM show a trend towards a significant correlation with child responsiveness ($r = .20, p = .06$) on the EAS.

Qualitative Analysis

It was planned that TA would be applied to cases that improved in PEM and PDI RF. Therefore to investigate the process of change in parental mentalizing, a subsample of cases were selected that improved by at least two scores on PEM and PDI RF from T1 to T3 in the intervention ($n = 3$) and control ($n = 1$) condition as shown in Table 9.

Subsample Parental Embodied Mentalizing and Parent Development Interview

Reflective Functioning global scores

Dyad	PEM		PDI RF	
	Time 1	Time 3	Time 1	Time 3
Dyad 1	4	6	4	7
Dyad 2	3	5	4	8
Dyad 3	3	5	4	6
Dyad 4	3	5	3	5

PEM: Parental Embodied Mentalizing

PDI RF: Parent Development Interview Reflective Functioning

Qualitative analysis findings suggested a process of implicit verbal and explicit embodied change in the mother-infant relationship. These changes developed over time and signified transitions within the dyadic relationship and the external world. Overall two main themes were produced by the analysis: “From Turbulence to Synchronicity” and “The Outside World and Transformations” (Figure 5). These are presented in detail below along with extracts from the data.

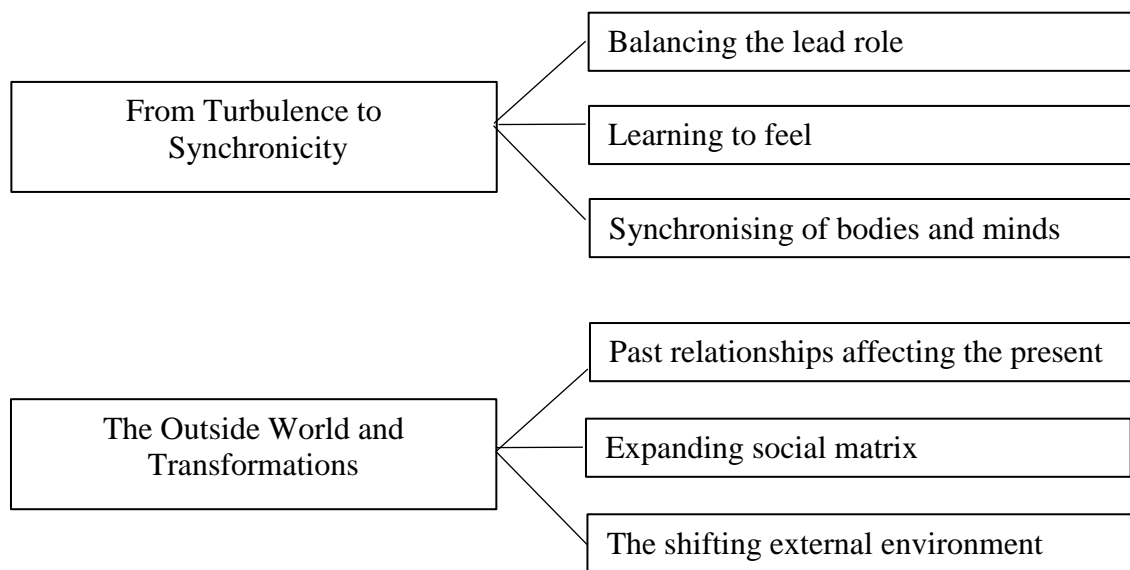


Figure 4. Thematic Analysis themes and subthemes.

From Turbulence to Synchronicity

Analysis found there was a movement from the affective turbulence associated with the early period of parenting to a sense of dyadic synchronicity a year later.

Turbulence was depicted by of sense of chaos. For instance, mother’s described feeling overwhelmed with emotions with the birth of their baby and adjusting to motherhood, “*I thought I was mentally ready for this and it’d just come as a complete shock*”. Over time, turbulence was found to transform into synchronicity. Time seemed to provide an opportunity for mothers to get to know their infant and their developing

personality. The movement from turbulence to synchronicity seemed to have been reached through a reflective process as highlighted in the extract below.

D2: He doesn't know what to do with his feelings so this is the way he reacts. I try to separate my emotions from his in those moments so like I don't get trapped in that mood of stress." (PDI: 1173-1176)

Observational narratives depicted fluid, integrated dyadic interactions and movement qualities were repeatedly described as: “smooth”, “regulating” and “repaired”. As well as regulation of the early emotional turbulence, the infant’s developmental capacities enhanced and their bodily signals became clearer. For instance, mother’s commented “It’s nice because we are on the same page”, “I think I can work out what he wants although he can’t speak”. The infant’s movement qualities were more frequently described as “high clarity” and in contrast to the newborn period, the infant initiated more interactions. The extract below highlights how the mother recognises the increasing capacities of infancy and how she facilitated infant to drink from the bottle independently, whilst still remaining present in the space.

D3: “When they learns something new and they do it for the first time and then they do it a couple of times afterwards, that’s lovely” (PDI: 1104-1105)

D3: The infant is sitting on both her knees, holding the bottle and drinking. Her body is directing towards the mother and the infant’s body is tall and extended with bound tension flow. Mother remains sitting on the floor within the interpersonal space, her body enveloped freely as she is crouched on a low plane next to the infant ” (PEM: 353-360).

The polarities of turbulence and synchronicity were not mutually exclusive; indeed both were depicted across the dataset over time. Yet, data indicated a marked contrast in the intensity of these two polarities from the early period to a year later in the

relationship. Three subthemes illustrated these elements and its influence of change in maternal reflective capacities and dyadic embodied interaction: Balancing the lead role, learning the feel and synchronising of bodies and minds.

Balancing the lead role. Analysis seemed to suggest that turbulence was associated with maternal dominance during the early period. Mothers led more interactions and appeared to reflect more on their own experiences rather than their babies. Over time, the initiator of the interactions appeared to be more balanced and the infant's external signals and internal states became clearer. Analysis suggested that in the early period, there was a propensity for mothers to lead interactions and for maternal experiences to overshadow the content of the interviews.

In the initial stages, mothers described a sense that they had to lead and work to develop the relationship with their baby. Mother's reported the relationship was not immediate: *"I haven't got a bond yet"* and *"our relationship is getting there"*. The extracts below highlights the mother's internal efforts to feel attached to her infant overshadowed her capacity to respond to his internal states.

D2: "I'm worried all the time about feeling attached to him about how much I...about how attached I am. So it's like, I'm pushing myself all the time to make the feelings grow." (PDI: 87-90)

D2: With rapid pacing, mother lowers the rattle into the infants near space. She rattles the toy with a high tempo, the infant increases in bound tension flow and directs away from mother and the rattle. Mother engulfs her body over the infant into his kinesphere. (PEM: 58-63)

In the extract, the mother described an urgency to form a connection. Her *"pushing"* of feelings could be reflected in the pushing and repetitive behaviour. These movement qualities depicted imbalanced interactions and affective turbulence. Analysis

across the dataset illuminated the manifestations of the maternal struggles to develop a relationship. Movement qualities were described as “*near*”, “*mismatched*” and “*tense*” and infants were observed to “*withdraw*” “*shrink*” and “*direct away*”. It is possible that the infants’ avoidance could have amplified the mothers’ anxieties and exacerbated maternal dominance and sense of turbulence.

Throughout the early period, mothers reported difficulties envisioning the infant’s inner world. Statements included: “*it’s hard to tell*”, “*I am not sure*” and “*he cannot talk to me to let me know*”. Mothers inferred a struggle interpreting their infant’s cues and analysis found young infants displayed a limited range of bodily movements. The opaqueness of mental states and narrow expression of infants’ signals seem to have contributed to a tendency for mothers to lead interactions as depicted in the extract below.

D1: Mother bounces infant by lifting up and down- mid and smooth tempo- Mother sculpts her body a little closer into infant- the infant remains in the same position with high tension flow . (PEM: 13-16)

Over the twelve month period, the relationship developed and mothers described feeling more connected to their infant: “*we’re more comfortable with one another*” and “*it’s a lovely bond we’ve got, but it took us time to get there*”. Preoccupations to feel attached appeared to reduce and infant development advanced. Observational data found that infants acquired new motor skills, signals became clearer and there was an increased engagement with the environment in the clinic room. Bodily movements tended to be synchronised; infants led more interactions and mothers were less intrusive. Space depicted both separation and connection as described below.

D1: The infant reaches forward and takes a wooden peg and places in the block. Mother takes a turn and places her peg into the block, she leans back and creates space and turns to infant. The infant repeats and replaces another peg. (PEM: 270-272)

Space represented physical distance between the mother and infant, as well as a psychological space in the relationship. Space seemed less threatening and more accommodating. Over time, mother's transcripts were less turbulent and mothers seemed more able to hold a balanced position: *"I think I have just got some perspective about what's important and what's not"* and referring to her infant a mother reported *"it's that thing between wanting to be independent and wanting to be with me"*. Maternal interactions seemed less engulfing and affect less overwhelming. Similarly, analysis found frequent descriptions of reciprocal and regulating interactions as identified in the extract below.

D4: "He showed me something that he was interested in. Just watching the people going by or the birds or whatever. There wasn't much communication going on, but it was just very quiet and peaceful...sharing what he was seeing." (PDI: 705-709)

The mutual connectedness the mother described was observed in subtle playful embodied exchanges. It appeared that there was a shared space and sense of connectivity and togetherness between mother and infant as described below.

D4: With a full extension, infant reaches out towards the stacking beakers. Mother lowers her plane, passes him a beaker and leans back; she creates an intermediate space. (PEM: 175-176)

How the mother's and the infant's negotiated balancing the lead role characterised a movement from mothers 'doing' to 'being' with their infant. This process was found to encapsulate change from turbulence to synchronicity.

Learning to feel. The early stage of the relationship was associated with unprocessed raw emotions. Turbulent affect immersed the relationship and there was a sense of disruption in the dyadic interactions during the early period. Over time, mothers appeared to learn to reflect on their emotions rather than just describe feelings

and infants were found to sublimate their affect through play. Analysis suggested that for both mothers and infants there was a process of learning how to feel and express their emotions in different ways.

In the early period, mothers described feeling overwhelmed by their own and their infant's affect as depicted in the extract below.

D4: "It's difficult to stop him crying. Umm, so he kinda gets really hysterical and shakes and goes panic stricken and that makes me feel panic stricken." (PDI, 69-71)

In this extract, the mother inferred feeling paralysed by emotions. Analysis across the dataset suggested a pattern of co-dysregulation. Mothers reported feelings of helplessness when faced with their infant's distress: *"I cannot cope"*, *"I thought I was gonna lose it"*, *"I'm very inconsolable"* and *"I feel useless"*. Although observational data did not depict highly distressed interactions, it seemed as though maternal internal tension manifested externally which maintained a cycle of low-level co-dysregulation. For instance, observations characterised maternal behaviour as *"repetitive"* and *"tense"* and the infant responses as *"withdrawn"* and *"rigid"*.

In what seemed an attempt to cope with overwhelming affect and protect their young baby from their feelings, mothers described cutting-off from emotions: *"I try not to think about it"*, *"I try to switch off from everything"* and *"I try not to show feelings"*. Analysis suggested that mothers struggled to learn to manage emotions.

D3: Infant is sitting on the table. There is a far space between mother and infant. Mother's arms are fully extended as she holds the infant around her body. Infant grizzles and reaches forward to mother. Mother remains in the same fixed and rigid position. (PEM: 51-54)

In this extract from the observational notes, the mother does not seem to respond to the infant's distress and there is a sense of impasse. The sense of rigidity was

associated with turbulence throughout the dataset during the early period and it suggested that mothers' were unsure how to adjust to their infant's internal states.

It appeared that transformations from turbulence to synchronicity were influenced by the mother's capacity to reflect on her inner processes. In particular, it seemed as though mothers learnt to recognise their own needs "*it's important that I get the opportunity once in a while to recharge*", take new perspectives "*I tried to evaluate the situation, I tried to be more objective*" and turning to friends for support "*it's nice because we are all in the similar boat and we know how one another feels*". With an increased awareness of their own experiences, it appeared that mothers were more open to learning and envisioning the influence of their behaviour on the infant. The turbulent spilt of emotions characterised in the early stages of parenting transformed into integrated narratives as the relationship developed.

D2: "Maybe he feels that I am doing something violent to him because I, I'm applying extra pressure onto his thighs to be able to put the nappy on...he feels that there is something going on that doesn't work according to his expectations and he cannot have any power over the situation." (PDI: 886-894)

In this extract the mother provided a vivid representation of the inner world of the infant. Rather than avoiding affect, she reflected on potentially aggressive feelings. Learning to maintain a reflective stance appeared to enhance regulation and synchronicity. In this extract below, in the interaction the mother appears to respond to the infant's need to self-regulate.

D3: Mother is crouched on all fours directing to the infant. The infant scuttles around the room, and mother slowly crawls after her. The infant increases in tension flow, places her hand into her mouth and jumps up and down. Mother reduces her tempo, stops crawling and provides space. (PEM: 254-258)

Across the dataset, the infants play transpired as an important opportunity to learn to express and regulate feelings. The extract above depicts a shifting rhythm of embodied interactions. Rather than the parental “*rigid*” and “*repetitive*” movements associated at the early period, play imbued mixed feelings. Play appeared to provide an opportunity to sublimate affect and interactions evolved into synchronised movements.

Over time, although difficult feelings continued to rise, there seemed a shift in how the mother’s managed their feelings. This extract below could suggest that rather than feeling preoccupied by her depression, the mother could separate her feelings in the moment to be available for the infant.

D2: “(talking to the baby) It is easy for me to feel corrective to him because my feelings have oriented towards motherhood at the moment. Um, I was um, I was able to um, protect um my, my love, my my (comforting the baby) and poked feelings hm, through all this depression” (PDI: 769-773).

Learning to feel seemed to transform from the initial turbulent affect to richer process of feelings over time. Playful exchanges and the mother’s openness to respond to her own and her infant’s emotions contributed to the transition to synchronicity. An underlying mechanism that facilitated this learning to feel process appeared to be characterised by a moving towards rather than away from emotions, it seemed that over the year, the mother’s developed coping skills to help regulate their own emotions. It could be that rather than avoiding processing feelings, as the mother’s became more aware of their emotional experiences (and not flooded by them), they were in a position where they could begin to move towards and reflect on their thoughts and feelings. It could be that this greater awareness of their internal processes enabled the mother’s to have a richer insight into her child’s internal world.

Synchronising of bodies and minds. Analysis found that overtime there was an integration of cognitive and embodied processes. The early period there were tensions in the relationship. Parent's spoke about feeling unsure how to improve their situation and observational data revealed there were fewer embodied repairs to ruptured interactions. Over time, it appeared that mothers enhanced their cognitive flexibility and the bodily movements between the dyad were more integrated and sustained.

The mothers spoke about feelings of incompetence during the early stages of parenting. Statements included, *"feeling like I'm constantly not doing well enough"* and *"I feel guilty for everything"* and suggested an internal sense of disintegration. In the extract below, the mother reflected on how she considered she affected her baby.

D4: "because he's not getting the response from me that it's making him withdraw into himself." (PDI: 174-176).

In this statement, the mother demonstrated her capacity to reflect on the processes between her and her baby, and identifies her struggles to connect. The mother appeared to speak about how she felt cut-off in her mind and body and this led her infant to withdraw from her. Their observational data included *"flat"*, *"distant"* and *"functional"* descriptions of the interaction. These qualities could suggest a disjoint in the mind and body of the parent and infant. Disjointed movements appeared to be characterised by limited use of the body, and although there were attempts to connect, the embodied movements did not appear full or authentic.

D4: Mothers presents the toy on a linear pathway. Mother mid tempo shakes the toy, the infant shrinks- he brings his arm into his body (PEM: 96-98).

In the extract above, there appears flatness to the interaction and the mother does not adjust her movements. Although trying to engage the infant, there seems limited

meeting of minds. Across the observational data, there was a sense that the interactions could be mismatched. While parents were trying to respond to their infants, there was a disconnection in the bodily interactions. Analysis revealed that interactions in the early stages could be ruptured without repair.

D3: Mother takes infant by the hands and claps them together. Infant is high in tension flow and tucks her arms into her body. Mother lifts infant into her body (PEM: 76-78).

In the extract, the mother ruptures the interaction by continuing to shake the infant's hands as she withdraws. There seemed little connection in responding to the infant's signals; instead the mother's bodily movements seemed abrupt, sudden and unclear. The infant could have felt there was little consistency in the interaction.

Analysis found that over time, integration evolved. The extract below reveals how the mother responded to the infant's subtle signals.

D4: Mother places a helmet on top of infant's head, with a smooth pace she lowers her plane to the floor...infant raises his hand to touch the helmet. Mother sculpts her head around infant and gradually removes the hat. (PEM: 156-159)

The observation demonstrates how the mother was attentive to the infant's embodied movement and she was prepared to adjust to his signals. Across the dataset, over time, there were more frequent descriptions of dyadic interactions that were "smooth", "gradual", and "anticipated".

Over time, the exchanges appeared increasingly reciprocal and mothers tended to follow their infant's initiations. Mothers reported that the relationship with the infant "feels more natural" and rather than breaking down when faced with their infant's distress, mothers spoke about integrated and regulated experiences.

D1: "Even when he's upset about his nappy, that I feel that I need to be kind to you. I endlessly repeat myself and that sort of thing and I generally try to keep it in a normal, light compassionate sort of terms." (PDI: 1728-1729)

This extract identified how the mother kept an open reflective stance in her mind that enabled her to adjust her behaviours to support the infant. This appears to suggest a greater sense of an understanding the influences between the mind and body within the dyad.

Synchronicity appeared to develop through a process of integration. Over time, there was a greater sense of authenticity in the embodied interactions and reflective processes in the dyad.

The Outside World and Transformation

Analysis found changes in the external environment surrounding the mother-infant dyad. The outside world referred to the external aspects surrounding the immediate mother-infant dyad and the theme represented more than just changes in the physical environment. Transformations were found in the dyadic intra- and interpersonal relationships in the context of outside world.

Intrapersonal transformations were associated with the maternal representation of relationships. For example, one mother reported that aspects of their childhood relationship with her caregivers were “*frightening*”, and another mother reported feelings of being “*unwanted*”. Childhood memories seemed to surround and encapsulate the mother and infant relationship as the experiences appeared to be echoed in aspects of the mothers’ representations of their babies. These mothers reported that their baby had “*aimed it at me personally*” and “*she’s a monster*” respectively. As the infant developed mothers tended to reflect more on the infant’s inner world rather than their internal (and perhaps unprocessed), experiences linked to their own past.

Analysis also found shifts in interpersonal relationships. The milieu surrounding the mother and infant became less threatening over time and mothers described an expansion of interpersonal relationships. In the extracts below the mother spoke about

the impact of being a single parent and appeared to describe feelings of helplessness in being alone. However, over time there was a sense that the mother intentionally sought support from a wider social network.

D3: "I've been quite stressed so it would have been nice to have had somebody there...but their not and there's nothing I can do about it." (PDI: 553-554)

D3: "I have a good support network of friends, there's three of us, we are all single moms, all got babies all similar ages so we've got support in each other." (PDI: 1227-1228)

The data depicted the external world to operate on three levels: (1) past experiences rooted in the mother's history; (2) interpersonal relationships; and (3) the physical environment. Three subthemes illustrated these levels: Past relationships affecting the present, expanding social matrix and from impinging to facilitating environment.

Past relationships affecting the present. Analysis found aspects of the mother's experiences of their caregiving relationship repeated in the relationship with their own infant. Particularly during the early period, the affect associated with the mother's childhood appeared to link to the affective tone of the mother's relationship with her infant. As the infant developed, it appeared there were transformations in how the mothers' reflected on their relationship with their infant and there was a shift in the quality of the interactions.

Across the interviews during the early period, mothers spoke about a range of experiences during their childhood. The extracts below identified a striking difference in the emotional quality of the mothers' experiences of being parented and their experiences of parenting.

D4: "I was frightened of getting him angry so it was always training ourselves around him." (PDI: 422-425)

D1: "I didn't have any doubt that my mother loved me and still loves me." (PDI: 498)

D4: "He often looks at me he's reproaching me, definitely. He kinda looks at me like he's really not that trust that he's for me for a mum, modelling around, getting it all wrong." (PDI: 108-111).

D1: "I love it when he smiles at me. That's absolutely gorgeous. Um and when we responds to me...I know to respond to him and get him to stop crying, that's really lovely 'cause it feels like he knows who I am." (PDI: 49-54)

The affective tone of the mothers' past experiences with their caregivers appeared to echo in their descriptions of their relationship with their infant. In Dyad 4, the mother's childhood appeared to be characterised by a torrent of painful emotions, in comparison the mother in Dyad 1 reflected on a more stable and protective relationship with her caregiver. It seemed that during the early period, the baby appeared to be surrounded by the mother's history outside their relationship.

Two mothers described a difficult upbringing and it seemed unbearable for the mothers to reflect on these experiences: *"I have no idea. None whatsoever"* and *"that's an impossible question"*. These transcripts were flooded with hostility: *"ripped the family up"* and *"I probably have some violent rages"*. It appeared that the unprocessed trauma could have affected the mother's state of mind in relation to her infant. The observational extract below portrays an embodied interaction imbued with underlying tension.

D4: With a bound tension, mother lifts infant. The infant's body seems rigid and heavy. He arches his arms in front of his body. Mother repeats the lifting movement. (PEM: 47-48)

In the extract above, the tension could potentially be associated with the mother's experiences of feeling 'reproached' by her infant and others in her childhood

experiences. Across the dataset, analysis identified that childhood experiences were embedded in mother-infant embodied interactions. For instance, one mother reported an ambivalent relationship with her caregiver and again her past experiences appeared to manifest in her interactions with her baby outlined in the extract below.

D2: “She wasn’t able to actually hug me...My mum was good company, she always had the perfect entertainment.” (PDI: 488-495)

The mother described her caregiver as someone who provided a positive experience but a relationship that seemed to lack emotional and physical intimacy. Observational analysis revealed that the interactions between one dyad predominately involved toys and the bodily movements were described as “*overwhelming*” and “*fast*”. It could be that, like her experiences of being parented, the mother wanted to create ‘*perfect entertainment*’ but there was a lack of emotional connectivity. In contrast, another mother spoke about a ‘*confusing*’ experience growing up. Her interview was characterised by ‘*anger*’ and feeling ‘*wound up*’ and the observational data of the interactions revealed there were many types of interactions and there was an ‘*abrupt*’ and ‘*fast pace*’ to the quality of movements. Subsequently this could have felt confusing for the infant, who was identified to ‘*selfregulate*’.

Over time, it seemed that mother’s reflected (rather than avoided thinking about) their past experiences, “*the memories with him is always in the surface, which is an improvement*”. It seemed that mothers could begin to tolerate some of the painful feelings associated with childhood experiences. For instance, during the first interview, one mother could not think about her parent’s behaviour, yet a year later she began to open up her reflections.

*“ D4: “and why do you think your parents behaved the way they did during your childhood?
(Laughs). I couldn’t tell you. (PDI: 781-783)*

I think my mum, she probably obviously seems alone a little, but she was one of eight, so things were a lot different from my mum when they were, my nan raising my mum... raised in a different time, they never really, when they were younger they never really think about it, my mum obviously doesn't think" (PDI: 1381-1388)

Perhaps, in a similar experience this mother struggled to “*think*”, but in contrast, it could be that with her own experiences of being a parent, she wanted to break the repetition and connect to her feelings.

“ D4: “ she doesn’t believe it is okay to talk about feelings....whereas I think it is good to get things out in the open because it makes me feel better. ” (PDI: 1358-1361)

There seemed a shift in how feelings were processed, in terms of reflecting on childhood experiences there were developments in the affective mother-infant relationship. In the extract below, in contrast from the painful reproach she experienced with her newborn, this mother reflected on a very different relationship a year later.

D4: “He makes me laugh a lot and he does things quite deliberately to make me laugh I think.” (PDI, 668-669)

Across the dataset, past relationships affecting the present seemed less prevalent when the infant was older. Together, the parent’s richer reflection on their own experiences, the infants’ psychological and physical development contributed to a sense of separateness to the mother’s past experiences.

Expanding social matrix. Analysis revealed there was a social world surrounding the mother and infant. The matrix appeared to transform from the initial dyadic mother-infant relationship, to the triadic mother-infant-father relationship and mother-infant-interpersonal world.

Throughout the dataset, analysis found that interactions during the early period predominately involved body-to-body contact between the mother and the infant. This may reflect the developmental stage of the infant (in that they require physical support).

D1: Mother embraces infant as she sculpts her body around his. She wraps her arms around him and the infant curls his body and buries his body into her breast. (PEM: 65-66)

In this extract, there is a sense of connectivity and togetherness as the infant nestles his head into his mother. The dyadic relationship and absolute dependency was amplified for three mothers who were single parents. Mother's described the father's physical absence with a sense of resentment, helplessness and abandonment.

D3: "I didn't think it was gonna be easy. But I wasn't prepared to do it on my own either which was.. 'cause obviously if I had my partner with me it sort of would be easy" (PDI: 309-311)

It seemed that relationships from the outside world of the mother-infant dyad created conflict for all cases. Analysis revealed there were struggles in transitioning towards triadic relationships, even with the physical presence of the father. The extract below highlights the mother's feelings of enmeshment with her child.

D2: "I think (the relationship) is close, maybe too close and there is not enough space for my husband to participate." (PDI: 775-776)

In the extract, it seemed as though it was the mother who struggled to create a space for the father. Analysis revealed that across the dataset it was the mother's not the infant's that struggled with triadic relationships. For example, Dyad 3 said that she "blamed" her father for aspects of her upbringing and perhaps because of the emotional pain and the physical absence of her baby's father, triangulation seemed difficult for this mother.

D3 “And I was very angry. But for her more than anything because she don’t even know who he is. And it’s not her fault.” (PDI: 472-473)

Yet, infants seemed to initiate embodied triadic interactions through play and this appeared to facilitate transformations with the outside world. Body-to-body contact associated with the early period had illuminated to triadic interactions through symbolic play as the infant developed.

D2: The infant expands his directionality and extends towards the toys. With a smooth pacing, mother lifts the telephone and places this against her ear. She turns her body and looks to the infant. Infant extends and takes the phone and brings into his body. (PEM: 265-268)

In the above extract, the presence of a third position could be symbolised in the play with the telephone. Rather than there not being enough ‘space’, for the father (which the mother described earlier), it could be that by sharing a game with the telephone, the mother was bringing in a third position to the exploration and relationship. For all dyads, transitioning to a third position through the use of toys could have been less threatening than the mother’s representations of the third position of the father.

In contrast to triadic relationships, mother’s encouraged their infants to engage in the social interpersonal world. Forming additional relationships seemed important as highlighted in the extract below.

D4: “I would like him to form relationships outside of the relationship with me and umm to have other people that he can turn to for fun and friendships.” (PDI: 473-474)

Engagement with the wider interpersonal world could have been less threatening for the mother compared to the separation and rejection associated with triadic relationships. Across the dataset, in contrast to the thoughts regarding the fathers, the

wider social network seemed to be welcomed, for instance: “*she looks comfortable with the family*”, “*he smiles very often at me and at everybody*”, and “*he loves staying with people*”. These statements appear to reflect that the mother’s valued the signs of interpersonal connection between their infant and those around them.

Expanding social matrix appeared to develop from dyadic, to triadic and interpersonal relationship. It appeared particularly difficult for the mother’s to expand the dyad to the triadic relationship with the father’s and this seemed to have affected their capacity to reflect on how this would be experienced by the infant.

The shifting external world. Analysis found transformations from an impinging to facilitating environment. Interview data identified impingements in the outside world (e.g. temporary accommodation, parental separation) and disruptions were evident in the immediate dyadic interaction (e.g. ruptures, abrupt pacing). Over time, there was a shift towards a facilitating external environment; this included mothers reaching out to the social network and the dyads engagement in symbolic play.

The impinging environments appeared to include the mothers’ perception of how they could affect their infant. For instance one mother reported, “*I’m worried he may be damaged by my depression*”, indeed as identified in the extract below, the interactions were characterised by flatness in the kinesethic quality.

D4: The infant reaches out to the toy, mother lowers the toy to him. He brings his arms into his body, mother shakes the toy (PEM: 125-126).

In this extract, the mother’s gestures appear stilted and lacking in affect. Across the dataset, analysis revealed impingements could take the form of the physical environment. This included the circumstances surrounding the dyad. For one dyad, their situation was particularly unstable.

D3: “She was first born between my mothers and the hostel, the continuous moving, we didn’t get into a routine and I think that unsettled her quite a lot” (PDI: 614-615).

It seemed that aspects of the “*unsettled*” external living environment was mirrored in some of the kinesthetic qualities of the dyadic interaction. Dyad 3 described continuous and perhaps sudden relocations, and the following observation highlights the mother’s unanticipated, and potentially unsettling movements in her interactions with her daughter.

D3: “mother holds infant in front of her body, the infant body is slouched and mother is holding her underneath the shoulders. Suddenly mother shakes infant, her body jolts and increases in tension flow” (PEM: 15-18)

Over time, it seemed that mothers were able to engage in the external environment in a different way. The extract below encapsulated how the mother reflected on a recent experience in the outside world.

D2: “In that moment I didn’t have to think about how to entertain him because there was entertainment outside, my brain was more relaxed...in a way the people around were helping me to have kind of a nice moment.” (PDI: 801-806)

The mother reported how they turned to an environment that appeared safe and regulating. The observational notes reported interactions that were ‘*shared*’, ‘*adjusted*’, and explorations were “*infant led*”. Perhaps as the infant was able to use the environment the mother felt less pressured to “*entertain*” and subsequently she was more in a position to respond to the infants signals. In the extract below, the infant clearly signals to a toy and mother moulds her body around infant to facilitate the exploration.

D2: The infant is leaning against the mother's body, and with a full extension he reaches his arm out to a toy in the intermediate space. The mother slowly lowers herself to pass the toy, the infant increases in pacing and manages to take the toy and holds close against his body and the mother leans back (PEM: 203-205)

It seemed that aspects of the external environment could be reflected in some of the qualities of the relationship with the mothers and their infants. As presented, the data identified impingements in the environment were prevalent during the newborn period and these seemed to reduce over time. It seemed that as the mother's developed an increasing sense of feeling more settled, and perhaps with the infant's curiosity in the environment, there was a shift in the mother's perception of their surroundings.

Overall, TA revealed that the parents' embodied and reflective capacities changed over time. However, time alone did not account for how and why changes occurred. It seemed that there were elements both within and outside the dyad that contributed to development of implicit and explicit processes. Analysis revealed that it was a dyadic development, in that both the parent and infant enhanced their capacity to communicate to one another.

DISCUSSION

The current study provides new insights into the processes of implicit and explicit mentalizing in the mother -infant relationship. As mentioned at the start of this thesis, the research questions and design of the current study were formulated before the findings of the original research were known or published. The current research was an exploratory project and the hypotheses at the time were based on existing theoretical and empirical considerations not on the findings of the original study (Fonagy et al., 2016).

One of the hypotheses in the current research expected that the intervention would significantly improve PEM scores compared to TAU. However, quantitative analyses suggested that irrespective of condition (intervention or control) PEM did significantly increase over as 12-month period (T1 to T3). These findings suggest that embodied mentalizing is a capacity that naturally develops over time in the parent-infant relationship. Second, there were mixed results regarding the associations between PEM and parent and infant outcomes at each time point. There were limited significant correlations between PEM and explicit and implicit measures of mentalizing. PEM was significantly and negatively correlated with maternal depression at T3 and significant correlations were also observed between PEM and multiple measures of parent-infant interactions across all three-time points. There were no significant correlations between PEM and infant development, and PEM and infant attachment. Qualitative analysis followed the statistical component to investigate the process of change in parental explicit and implicit mentalizing. Dyads that were identified to have changed by two scores in either condition (intervention or control) in both the PEM and RF were selected for TA. Two themes were identified from the analysis: “From Turbulence to Synchronicity” and “The Outside World and Transformations”. Findings suggest that changes in mentalizing are associated with changes in the intra- and interpersonal world

of the parent-infant dyad. Further, it seems that change in verbal and embodied mentalizing processes point to the importance of integration of internal and external conflicts to improve the wellbeing of parents and their infants.

PEM and Parent-Infant Psychotherapy

The first aim of the study was to identify whether parent-infant therapy was more effective than TAU enhancing PEM scores. The results indicated that PEM significantly increased over a 12-month period across both groups. Contrary to the hypothesis, PEM ratings did not show greater increase in the intervention group. Although PEM increased over six-month periods (T1 to T2 and T2 to T3), this was not statistically significant.

Parent-infant psychotherapy pays considerable attention to reflecting on the inner experiences of both the parent and infant and increasing parental mentalizing is a core aim in the model (Baradon, et al., 2005; Lieberman, 2004). Therefore, it was surprising that treatment effects were not found to influence parental mentalizing capacity more than treatment as usual. However, the findings are in line with a previous systematic review, which found that parent-infant psychotherapy did not significantly improve parental reflective functioning compared to either no treatment or treatment as usual (Barlow et al, 2016). Indeed, a study of treatment effects of a parent-infant focused intervention found that although there were improvements in RF, it did not reach significance (Sadler et al., 2013). It could be that as PEM and RF capacities are based upon a global score, these single ratings may not sufficiently detect clinical changes despite developments potentially being clinically relevant. Further, the current sample was quite small and so may have been underpowered to detect statistically significant effects, despite changes being clinically important. The limited treatment effects on PEM could also relate to methodological implications of studying

longitudinal treatment outcome data in a high-risk clinical group. In the original study, Fonagy et al. (2016) reported that a large quantity of participants in the intervention group received little therapeutic input as they did not attend the sessions. In the current study, there were a high proportion of participants in the treatment group who had been assessed for PEM but had attended fewer than none or one ($n = 6$, 17%) or less than five ($n = 15$, 43%) parent-infant psychotherapy sessions. Therefore, the limited number of therapy sessions attended could have reduced the impact of treatment effects. Due to the high rates of attrition as observed in this study, longitudinal research focusing on treatment effects should aim for a larger sample at recruitment.

The methodological considerations of the original and current study provide contributions to explore why treatment effects were not observed. Yet, a major finding was that PEM significantly improved over time in both groups. This is a surprising and important result, as these preliminary findings suggest that embodied mentalizing could be a natural capacity that evolves. Indeed, mentalizing is thought to be a process that develops in the attachment relationship (Fonagy & Target, 2003) and the quality of this relationship is relatively well established by the first year of age (Ainsworth et al., 1979). In the current study, the qualitative results suggested that the early newborn period was flooded with affective turbulence and these heightened states of arousal could have limited the mother's capacity to mentalize (Fonagy et al, 2004). It could be that as turbulence naturally settled over time and the mothers were in a more regulated state, they were implicitly more able to mentalize on the experiences of the infant. Furthermore, mothers affected by postnatal depression are a vulnerable group and depressed mothers can become consumed by their own feelings, which can lead them to be less responsive and engaged to their infant (Murray et al, 2003). Interestingly, rather than preoccupied by their infants experience (Winnicott, 1960), mothers with mental health difficulties could feel more preoccupied by their own mental state and therefore

less available to their baby. Again, it could be that as maternal mental health improved, the capacity to reflect on the infant's mental states increased and therefore indirectly affecting the capacity to mentalizing. It would be interesting to conduct a longitudinal study to investigate whether PEM is a capacity that naturally occurs in nonclinical samples. It could be that in situations of optimal caregiving environments, parents may present with higher PEM capacity during the stages of maternal preoccupation, as according to this theory, mothers are highly sensitivity and attuned to her infant's needs (Winnicott, 1960).

Indeed, it seems there are complex and natural processes that evolve in the dyad over time. Although these capacities may be accelerated in optimal caregiving, in the current sampled there seemed a psychological development in which parent becomes implicitly and unconsciously more aware of their child's internal world.

PEM and Associations with Parent and Infant Outcome Measures

Associations between explicit mentalizing and parental representations. The study aimed to identify the relationship between measurements of implicit and explicit parental mentalizing. It was predicted that as these assessments all measure the parent's capacity to view the child as a separate psychological agent, PEM would concurrently correlate significantly with explicit measures of mentalizing. However, analyses revealed non-significant associations between PEM and assessments of explicit parental mentalizing, except that PEM was significantly negatively correlated with parental narcissism on the ARR subscale at T1.

The current findings suggest that, overall, how parents verbally reflected on themselves, their infant and their relationship did not correspond to the embodied processes within the dyad. This was unexpected given that empirical literature indicates a strong link between the parental mentalizing capacity and interactive behavioural

patterns with the child (e.g. Ensink et al., 2016; Smaling, 2016). Although non-significant results, these important findings suggest that implicit and explicit mentalizing are separate phenomena and involve two distinct processes (Lieberman, 2007; Satpute & Lieberman, 2006). In a broader context, these findings could be considered to support philosophical debates that suggest applying a phenomenological position could be valuable when investigating mentalizing processes (Davidsen & Fosgerau, 2015). Indeed, in attachment concepts, labels and classifications can lead to generalisations that could potentially fail to capture specific qualities of the parent-child relationship (Meins, 2017). Perhaps in a similar perspective, mentalizing could be thought to be an umbrella term, which may not fully address complexities of interpersonal processes (Choi-Kain & Gunderson, 2008). These arguments are supported by the current results that indicate the value in examining the nuanced differences between multidimensional positions within the mentalizing framework.

In terms of examining the relationships between implicit and explicit processes, there was a single significant finding in which low levels of narcissism were correlated with high PEM ratings. Indeed, the qualitative findings in the current study identified ‘Balancing the lead role’ as a subtheme, which may relate to this finding. For instance, it was identified that during the early stages of pregnancy, parents were found to predominately dominate and lead interactions, and focus on their own rather than their infants internal experiences during the interviews. It could be that parents with high levels of narcissism were less able to identify and kinesthetically respond to their infant’s internal processes, particularly during the turbulent early stages of parenting. Indeed, exploring subscales of measures could provide further insight into what may underlie the relationship between implicit and explicit processes.

While it was hypothesised there would be strong and positive correlations between the measures, mentalizing is considered a multidimensional construct (Fonagy

& Luyten, 2015). Although predominately measures of explicit mentalizing, it appears the assessments combine elements of both implicit and explicit polarities, which include the parent's capacity to appropriately comment on the child's mental state during an interaction (Meins & Fernyhough, 2015) and the parent's verbal responses watching back segments of an interaction (Koren-Karin, et al., 2002). These measures focus on how the parent explicitly reflects on a specific interactive experience, and therefore could involve more integration of implicit and explicit mentalizing process (i.e. inferring mental states from specific bodily-behaviours). Unlike mind-mindedness (Meins & Fernyhough, 2015), and IA (Koren-Karie et al., 2002), the RF, ARR and MORS assessments do not focus on how the parent understands a specific interaction, rather it requires the parent to reflect on many different aspects of their own and their child's experience. If these processes require distinct neural systems, it could offer an explanation as to why differences in these explicit measures and PEM were found in the current study (Fonagy & Luyten, 2015). This raises considerations for clinical practice, as if a parent and infant have been identified with difficulties in the relationship, offering treatment to the parent alone may not adequately address the clinical situation. Therefore, these findings would appear to support the need for specialist parent-infant interventions that aim to enhance parental mentalizing.

PEM and infant attachment. The study sought to identify the relationship between PEM and infant attachment at T3. Given that mentalizing is proposed to be the process underlying infant attachment (Fonagy et al., 1991; Slade, 2005), it was predicted that high PEM scores would concurrently correlate significantly and positively with secure attachment and negatively with disorganised attachment. In contrast to the hypothesis, the study found there were no associations between PEM and infant secure or disorganised attachment.

In a large-scale longitudinal study with normative families ($N = 200$), research found that PEM at six months predicted infant attachment at 15 and 36 months (Shai & Belsky, 2017). The results in this thesis are not in line with these predictions, which may relate to theoretical and methodological implications. Firstly, it is not possible to infer predictions in the current study as SSP was assessed at one time point only and as the present findings indicated, various associations were found between PEM and the same variable across time-points. Further, a clear distinction between these studies is that the mothers in this study experienced mental health problems and social adversity and therefore presented as a high-risk group, not a normative population. Retrospective and longitudinal studies have identified that social disadvantage presents multifaceted challenges that affect the quality of parenting (e.g. Aber, et al., 2000; Scaramelle et al., 2008; Webb et al., 2014). Interestingly, the current results indicated that as maternal mental health improved over time, PEM capacity increased. It could be that mothers in the current study were more preoccupied with their own feelings during the newborn period, thus reducing the quality of their interactions with their baby (e.g. Diego, 2001; Murray et al, 2003, Stein et al, 2012). Although mental health and the quality of interactions improved over time, it could be that these early difficulties impinged upon the relationship and therefore it could require a longer period for the positive developments to become embedded in the attachment relationship. Further, it could be that it required a longer follow-up period to have observed these effects and future longitudinal research exploring parent-infant relationships could include both 12- and 18-month follow ups when assessing infant attachment. Whilst it was not an aim of the current study to investigate the predictive relationship between PEM and outcomes measures over time; it could be valuable to conduct regression analyses to examine if PEM at T1 or T2 predicted infant attachment at T3. These analyses could identify if

there are developmental periods that are particularly sensitive to embodied processes from the earliest stages of life.

PEM and maternal mental health. It was predicted that PEM would concurrently correlate strongly and negatively with measures of maternal mental health. Quantitative results indicated that by T3 increases in PEM were significantly associated with improvements in maternal emotional wellbeing. There was a highly significant relationship between self-report ratings of maternal depression and PEM was moderately associated with self-reported psychological distress. Although an improvement in maternal mental health was associated with PEM at the other time points, correlations were not statistically significant.

Over time, there was a significant improvement in the embodied processes and dyads in both conditions were found to statistically demonstrate ‘clear’ PEM capacity. It seems that by the time the infant had reached their first year of age, the mother’s mood and embodied processes were integrated. Indeed, this was identified in the qualitative analysis in the current study in the theme “Turbulence to Synchronicity”, whereby embodied aspects and reflective expressions were revealed to have transformed into cohesive processes. Observational studies have identified that postnatal depression can affect the quality of the interaction, specifically that mothers with depression display withdrawn or intrusive parental behaviours (Diego, et al., 2001, Diego et al., 2006). The findings support the literature and further demonstrate that maternal mental health and embodied processes are significantly related by the end of the first year. The findings indicate that if mothers experiencing low mood are offered psychotherapeutic intervention to enhance their wellbeing, this could lead to improved outcomes for the parent and the parent-infant relationship. However, the current study was an initial exploratory analysis of the associations between outcomes and did not establish the

direction of effects between time points. Further regression analyses could be conducted to determine if the improvement in mental health lead to enhanced embodied processes or vice versa. These findings could indicate if interventions should target maternal wellbeing or parental mentalizing for this clinical group.

PEM and infant development. It was expected that PEM would concurrently correlate strongly and positively with infant development across all time points. However, findings did not support this hypothesis.

The sample was identified to be experiencing high levels of social disadvantage and maternal mental health and these cumulative risks combined could have adversely affected child development (Spencer & Strazdins, 2015), and for this reason the intervention may have only a limited effect on PEM. Although a tentative suggestion, PEM may not have had a mediation effect on infant development due to the high risk factors. The BSID-III has been found to have good reliability and validity (Bayley, 2006; Provost et al., 2000), however this measurement of language, cognitive and motor skills may not have been as sensitive as the Mullen Scales of Early Development (Mullen, 2005), which may have detected specific neurodevelopmental functioning (gross motor skills, visual reception, fine motor skills, expressive language and receptive language). Future research could examine whether PEM scores are associated with child development with different measures across populations, to understand how these two outcomes are related.

PEM and parent and infant interactions. The study aimed to investigate the relationship between PEM and measures of parent-infant interactions. It was predicted that PEM would strongly and significantly correlate with all subscales across all three time-points, as all variables measured the quality of the parent-infant interaction.

Analyses supported this hypothesis, and specifically found that correlations were highly significant at T3.

This is the first study in which PEM had been assessed with other measures of parent-infant interactions. As the results found significant correlations between the assessments, this study can offer valuable contributions to the construct validity of PEM. In their review of measures assessing parent-infant interaction, Sleet and Fonagy (2010) identified five concepts across the assessments and PEM would seem to include these concepts (i.e. sensitivity, affective quality of the interaction, cooperation and parental emotional support). However, not all subscales of EAS and CIB were significantly associated with PEM and therefore suggest that PEM captures related, but distinct qualities of dyadic interactions.

PEM was significantly correlated with parenting behaviours at T3, which suggests that over a 12-month period parenting behaviours were well established and integrated across different domains. Indeed, TA in the current study revealed that dyads moved from “Turbulence to Synchronicity” and indicated that over time there was an increase in cohesion in reflective and embodied expressions. Delineating the different qualities of parenting behaviours across the measures in the early stages is important, as empirical studies have found dyadic interactions are associated with infant attachment (Sleet & Fonagy, 2010). Further studies examine the psychometric properties of the measures to identify which qualities are associated with optimal parenting. These findings could be specifically relevant for targeting parenting behaviours in video-feedback interventions.

Qualitative Exploration of the Process of Change in Parental Mentalizing

TA aimed to investigate the processes of change in implicit and explicit mentalizing over time. Four cases that improved by two scores on both PEM and RF

from T1 to T3 were extracted for TA and two themes were identified: “From Turbulence to Synchronicity” and “The Outside World and Transformations”. Analysis found that when change occurred there was a shift towards processing feelings and a cohesion in the interaction and a re-engaging with the environment and interpersonal world outside the dyad.

The first theme, “From Turbulence to Synchronicity”, identified that the families experienced a sense of chaos in the early stages of parenthood. There was a sense that mother’s were overwhelmed with feelings and described being “*scared*”, “*angry*” and “*depressed*”. Affective states were revealed in the observational data and narratives described parent’s exhibiting “*muscular tension*”. There was a sense mother’s were trying to hold themselves together. The data appeared consistent with evidence that suggests psychological distress can affect between 15-20% of women during the postnatal period (NICE, 2014). However, the analysis did not reveal that parent’s reported more or less affective states during early stages of parenting compared to later on in the child’s development. Analysis revealed that rather than emotions disappearing over time, what seemed to change were the ways in which the parent processed and managed their own and their infant’s feelings. For instance, parents spoke about trying to reassure themselves, taking a different perspective and turning to their support network. The observational data identified that over time there was a greater sense of “*space*” and “*fluidity*” to the movement qualities, rather than the “*rigid*” and “*near*” interactions associated with parents and their baby in the earlier stages. The role of affect regulation is crucial for the ability to reflect on mental states and therefore these increased coping strategies could have been very influential to enhancing the mother’s mentalizing capacity (Fonagy et al., 2004).

The analysis identified that it was a combination of factors that led to changes in the relationship. These processes could be associated with an increase in parental

mentalizing capacity or naturally occurring processes in the dyad. Indeed, mentalizing is considered a capacity embedded in the attachment relationship and perhaps this is a process that takes time to establish (Fonagy & Target, 2007). However, it could be that the turbulence surrounding this dyad impacted on how this process unfolded. For instance, the mothers were found to feel preoccupied by their own experiences, which could be associated with the impact of poor mental health (Murray et al., 2003). This internal focus could have impinged upon the process of maternal preoccupation and the experience of psychological connectedness between the mother and infant (Winnicott, 1960). As this process could have been disrupted, the mothers appeared to struggle to be aware of their infants needs both at the implicit and explicit level. Mother's spoke about feeling "*unsure*" and "*unclear*" about their infant's experiences, and the observational data depicted less vivid embodied movements in the young babies compared to when they were older. Interestingly, although there were no significant associations between infant development and PEM, observational data found that as the infant's developed, they initiated more interactions and the parents spoke in greater clarity about the mental states and growing personality of their child. Tyson and Tyson (1990) theorise that there are maturational pulls during early childhood, and it could be that the rapid increases of external developmental capacities facilitated the mother's awareness of their child's internal processes. Moreover, as the turbulence affect appeared to ameliorate over time, parental mentalizing increased due to the more regulated state of mind in the mother (Fonagy & Target date)

It seemed that the turbulence surrounding the dyad, including the parent's emotional wellbeing and the infant's developmental capacities, made it incredibly difficult for the parent to fully hold their babies in mind. Qualitative analysis revealed there were profound changes in the relationship, however given that it took time for the chaos to settle, these meaningful developments may not have been evident SSP. Indeed,

to look at the outcome of the SSP alone could be misleading as the statistical findings in the original study would suggest that there were limited improvements in the parent-infant relationships (Fonagy et al., 2016), whereas the qualitative analysis identified that considerable developments were made. These findings suggest that process-focused qualitative analysis could offer valuable contributions in studies of parent-infant relationships and provide a method to illuminate psychological processes and subtle changes that could be undetected in standardised procedures.

The data identified the wider milieu surrounding the dyad and a second theme was identified as “The Outside World and Transformations”. Analysis revealed that there were three levels of change in the external world and these related to aspects of the past, the environment and the social matrix.

Each parent spoke about striking aspects of their past experiences and analysis depicted patterns between the parents history and their current relationship with their child. This was found to be most profound during the early stages of caring for their newborn. Seminal literature from Fraigberg et al. (1975) introduced the metaphor “ghosts in the nursery”. Fraigberg and colleagues discussed how ghosts symbolised painful remnants of the parents’ past and represented unresolved relational experiences from their childhood, which could be unconsciously transmitted to their child. In the current analysis, data identified typologies of dyadic interactions. In the current study, the concept of primary maternal persecution seemed a pattern across the dataset (Raphael-Leff, 2010). In accordance to this perspective, mothers described a sense of feelings like a failure, which Raphael-Leff (2010) may consider to be associated with the mother’s resentment or ambivalence towards her infant, as the baby could tap into her hidden thoughts and weaknesses. Indeed, qualitative findings suggested that there seemed to be an intergenerational process of past experiences, in combination with elements of persecutory feelings transmitted from the parent onto the baby. From the

interviews and observational narratives in three cases there appeared predominate affective states in the parent's childhood histories, which included "*anxiety*", "*reproach*" and "*anger*", and these words were repeated in the mother's descriptions of the relationship with their infant. In the PEM data across the earlier interactions, particular words were repeated throughout each dyadic observational narrative, for instance anxiety seemed to link to "*fast*" interactions, the parent who spoke about reproach in her childhood had dyadic interactions described as "*rigid*". The mother who reported a history of anger was found to exhibit "*abrupt*" dyadic interactions. Although tentative, the qualitative investigation suggested that childhood experiences could be embedded in the parent's mind and the body and particular typologies of movements could be associated with affective states. Further empirical enquiry with larger sample sizes could identify if there are particular typologies of dyadic interactions, which could illuminate how intergenerational experiences become embedded in the relationship.

The theme 'Outside World and Transformations' depicted the process of change in the families external world. This theme was encapsulated by a transition in the space between the parent and the infant, which perhaps facilitated the parents to adopt a more open and reflective position in relation to themselves and their child. This sense of space could be related to Mahler's (1967) psychoanalytic theory of development. She suggested that there is psychological process of separation-individuation where the infant internally mentally separates from the mother, which can then lead to the development of an individual self-concept. Within this process, Mahler (1967) posited there is a period of "hatching" whereby there is a transformation in the infant from an internal focus to the external, outside world. From her perspective, the peak stage of hatching seems to occur during a developmental leap when the infant's motor skills increase and the infant becomes ready "for action" (Mahler, 1967, p.749). Perhaps this

concept of hatching could be a useful framework when considering how the infant's development created a physical space between the dyadic relationship and a turning towards the outside environment. Perhaps not only in this space could the infant begin to separate and develop a sense of self, it could have also created distance for the mother that enabled her to reflect on a different perspective of her own and her infant's experiences.

The concept of space seemed to be particularly meaningful in relation to dyadic and triadic interactions. For instance, themes of persecution appeared to transmit from the mother onto both the infant and the father. Whether the father was present or absent in the family there appeared to be a pattern that mothers could hold malevolent representations of the father, for instance extracts included “*I was very angry*”, “*blamed him*” “*this is your fault*” and underlying feelings of abandonment “*I wasn't prepared to do it on my own*”. Drawing from psychoanalytic theory, these representations are thought to provide the foundations of the child's representational interpersonal world (Stern, 1985). Perhaps a transmission of intergenerational experiences (Fraigberg et al., 1975) or a sense of persecution from the father (Rahael-Leff, 2010), it seemed that it was particularly difficult for the mothers to create space in their mind for a third relationship (Baradon et al., 2005). Furthermore, in both the quantitative and qualitative sample, it is unknown how much contact the father has with the mother and infant. Research indicates that partners of depressed mothers can be found to display less optimal parenting interactions in the newborn period, which then improves by three to six months (Goodman et al., 2008; Hossain et al., 1994). It could be that if the infant is able to experience positive interactions with the father, this could potentially improve the quality of the interaction and developing attachment signals towards their mother. However, the qualitative sub-sample seemed to suggest that the absent father seemed to remain persecutory and the mother, not the infant, seemed to

struggle to move towards triadic interactions. To gain a deeper understanding of how this could have affected the infant, it would be interesting to observe the interactions with the infant and father, or a triadic interaction with the infant-mother-other to explore if and how the mothers representation affected the infants experience of a third relationship.

Relevance to Counselling Psychology

As identified in the literature review, Counselling Psychologists work with children and families in a range of clinical contexts. The findings from the current longitudinal study could be relevant to those working with children and their families to enhance an understanding of how the verbal and nonverbal processes may unfold during therapy. Indeed, exploring these multifaceted dimensions could offer a fuller understanding of the subjective and intersubjective experience (Cooper, 2009). Mentalizing is considered a core process throughout psychotherapeutic modalities and therefore the study of embodied and verbal mentalizing is relevant to Counselling Psychologists across clinical settings (Allen et al, 2008, Diamond, 2010). Moreover, understanding the embodied processes between the therapist and the client could provide valuable insight into how experiences can become embedded in the body and offers a valuable perspective to enhance reflexivity of the therapeutic process.

Clinical Implications in Counselling Psychology and Beyond

The study was situated in a demographically diverse population and both PEM and RF are culturally sensitive measures. This is important, as assessments are not based on the judgement of parenting skills, neither are they based on cultural values, rather they are defined on the quality of verbal and non-verbal mentalizing capacity. Furthermore, qualitative analysis was approached from an inductive data-driven

perspective and therefore is not positioned from a particular theoretical orientation. These assessment and methodological choices are important, as although the findings are based on a small sample size, findings could provide implications for clinical practice.

Findings demonstrated that PEM significantly improved from baseline to 12-month follow-up and RF increased slightly but did not reach significance (Fonagy et al., 2016). It suggest that there is flexibility in parental mentalizing capacity, and specifically in embodied processes, and early intervention with targeted treatment could strengthen and integrate developments in implicit and explicit processes.

In terms of clinical practice, the findings indicate that when working with parents and infants the initial stages could focus on supporting the families to manage any turbulent affect, and later concentrate on enhancing their awareness to understand and synchronise their own and their infant's experiences. It seems that adopting an open-ended and reflective stance too early on in therapy could feel too overwhelming for the parent and may have a negative affect on the therapeutic process. In contrast, a focus on adjusting to the role of parenting and supporting the parent to notice behavioural interactions could be more containing before expanding on reflecting on the internal processes within the dyad.

Fagin (2017) identified when working with families on the edge of care, clinicians should include exploration of how environmental factors impact the parent-infant relationship. The current findings suggest that families in social deprivation would benefit from an early intervention that supported the family reaching out to a network. This could infer that professionals working with children and parents could integrate helping the family to access local community services, not only as a way to enhance their experience with the external network, but as a way to transform the interpersonal relationship in the dyad.

Applying PEM in clinical practice. Enhancing an individual's capacity to reflect on their own and others experiences is considered to be a core aim across therapeutic modalities (Allen, et al., 2008). The following ideas refer to how specialist interventions focusing on embodied processes could be applied in clinical practice. The clinical suggestions presented are both novel and tentative. The findings of the current study found that PEM significantly developed over time and there were no treatment effects. Therefore, based on these preliminary findings advocating for a clinically focused PEM intervention would be inconsistent at this stage. However, based on current video-feedback methods, as well as implications that emerged from the current qualitative findings, it could be that interventions drawing upon principles of PEM could be a valuable contribution to psychotherapeutic treatment. However, further research across clinical populations with larger sample sizes would be required to strengthen any proposals for clinical practice.

The use of video-feedback is a transferable clinical intervention when working with children and their families (Fukkink, 2008). Video-feedback is a useful technique as it helps to reflect back to the parent the quality and impact of their interactions (Fukkink, 2008). However, these methods tend to focus on exploring the positive interactions between the parent and infant (Kennedy et al., 2010), or specifically the more harmful interactions (Juffer et al., 2008). The qualitative data revealed that parents can feel high levels of persecution and to explore negative or less positive interactions may feel overwhelming and potentially traumatic for the client. However, these interactions could present the most risk in the relationship and therefore would be a fundamental target of parent-infant clinical interventions. The PEM framework provides a language that focuses on describing interactions without movement qualities being interpreted as “positive” or “negative”, and interactions can be described in kinesthetic

terms (e.g directionality, space, tempo) (Shai & Belsky, 2011a; Shai & Fonagy, 2014). The parent could be supported in noticing their own and their infant's movement qualities from a new perspective. Furthermore, as identified in the current qualitative findings, shifting the parents' attention on the body could ameliorate the parental self-preoccupations and redirect their focus to the infant.

While video-feedback allows an opportunity to have detailed breakdowns of interactions, filming sessions may not always be appropriate for the clinical presentation. Under these circumstances, the PEM framework could maintain a focus on the interaction in vivo. Specifically, the therapist could work with the parent to observe different qualities of interactions as they unfold in the clinic room. For instance, he therapist could ask reflective questions that are infant focused "can you explain why your baby did X?", parent focused "can you explain why you did X?", and relationship focused "how does it feel for you when your baby did that?" (Shai, 2013). As the findings from the current study have identified, rather than potentially threatening interpretations, these mentalizing-based questions could use the body as another perspective to reflect on the internal mental states of both the parent and infant.

Limitations

Several limitations were recognised and these issues related to the methodological design and the coding procedure. In terms of methodological limitations, the study was based on a relatively small sample size and over the 12-month period there was attrition from both the intervention ($n = 6$, 18%) and control ($n = 9$, 29%) conditions. In order to increase sample size, a preliminary analysis was conducted in which data was imputed based on the last observation carried forward. In this method, for any dyad that had a missing PEM value, the global PEM score at the previous time point was inserted. For example, if a dyad had a missing PEM score at T3, the PEM

rating at T2 was carried forward and inserted into the missing value. However, this method did not reveal significantly different results to the findings based on the existing data. Although this analytic approach marginally increased the statistical sample, a change in PEM scores between time points would have been expected and therefore the method of last observation carried forward could be criticised for generating biased estimates. With these considerations, data imputation was not included in the final design.

The original study was a treatment outcome study for mothers experiencing psychological distress and their infants. It is unknown what impact the fathers, or the dyads network, had on the mother and infant. Indeed, fathers can be affected by adjusting to parenthood (Condon et al., 2004), and their own mental health could affect the quality of their interactions with their infants (Goodman, 2008; Sethna et al, 2015). Furthermore, if the infant's mother is experiencing depression, the father may be in a position to provide optimal parenting behaviours and therefore could influence outcomes for the infant (Hossain et al., 1994). However, 35.5% of the samples were classified as single parent at baseline and therefore it is unknown how present the father was in the family. Indeed, the qualitative analysis revealed the psychological impact of the father (present or absent) was meaningful. Future research could examine the effects of therapy for mothers, fathers and infants in treatment to understand how the family system affects individual and relational outcomes.

In terms of limitations related to PEM coding, practical challenges emerged as not all of the video-footage could be coded. Across the dataset at T3, the infants were more active and mobile and there were occasions when the parent and infant were in separate areas of the room. To rate PEM requires the observations of the whole-body of the parent and infant, therefore, any moments when either the parent or infant are out of camera shot cannot be coded. Whilst this was a limited occurrence, the assessments

would have benefited from multiple cameras to enhance the quality of footage.

Furthermore, it is recommended that PEM is coded for a ten-minute interaction (Shai, 2013); however, in the current sample all video-footage was under eight minutes. It is unclear whether the length of the interaction would have affected the overall rating, or if a parents mentalizing capacity can be captured and accurately measured in a few minutes of being with their infant. Research could investigate this further by using a repeated measures design that compared PEM ratings for dyads assessed under the same conditions in both shorter (five minutes) and longer (ten minutes) interactions.

There were further implications regarding PEM coding. The measure assesses the quality in which the parent responds to their infants whole-body kinesthetically manifested mental states and arguably these signals may be difficult to detect in very young babies. This was the first study that had used PEM to assess parents with their infant's less than six months of age. In the current sample, the average age of infants assessed for PEM at T1 was 3.6 months and infants across this time point were identified to exhibit only a brief range of movements. TA identified that "Balancing the lead role" was a recurrent theme in the data, as it was found that mother's in the early stages tended to lead the interactions and reported struggling to interpret the infant's signals. Indeed, since assessing the sample, the PEM coding system has developed and infant clarity has been operationalized into a five-point scale (i.e. from low clarity to high clarity) (Shai, 2017). Furthermore, each observation of the kinesthetic qualities (tempo, pathway, tension flow, pacing, directionality and space) are required to be rated on a five-point scale for both the infant and parent. For instance, if a pathway is detected, the parent and infant would be rated from 1 (*rounded*) to 5 (*linear*) (Shai, 2017). Although these qualities were taken into consideration when assigning PEM scores, these scales could have been particularly useful when evaluating the expression and detection of the young infant's embodied mental states.

In terms of the qualitative research design, the current author assessed the entire sample and although was blind to the treatment condition could not be fully blind to the time point. Participant identification details were anonymised and randomised and high inter-rater reliability was achieved, and the study could have been enhanced if there was a second coder. As a single researcher coded the entire sample, this contributed to further considerations for TA. The author was required to analyse their own PEM coding sheet and therefore narratives of the interactions were based upon their own observations. PEM is manualised (Shai, 2013, 2017), with a comprehensive coding system and raters are trained to record interactions describing kinesethic movement qualities between the dyad. Narratives are descriptive not interpretative and the subjective position of an observer cannot be disregarded. In order to enhance reliability and triangulate the analysis, a researcher independent to the project and PEM reviewed the thematic maps for each dyad throughout the qualitative procedure.

Future Research

This was the first study to investigate PEM in a clinical sample and with the range of outcome measures available in the original study. Correlations were used as a preliminary exploratory investigation to examine the associations and strength of the relationships between PEM and parent and infant outcomes, however causality between the variables could not be established. Future research could extend these correlation analyses by conducting regression analyses to examine if PEM can predict outcomes for the parent and infant.

It would be clinically relevant to further investigate dyads that received the lowest PEM and RF scores, as these could be the families most at risk of relational disturbances. For instance GT could be applied the data to identify typologies of embodied movements and verbal expressions most associated with risk in the parent-

infant relationships. These findings could be transferred to clinical practice that could be provide a foundation for assessment and formulation.

Fathers can have a significant influence on the emotional climate of a family (Goodman, 2008; Hossian, et al., 1994). Cross-sectional and prospective research is required to examine how the father's embodied processes are associated with child and relational outcomes within the family. Although currently a dyadic measurement, further research could identify whether PEM could be extended to assess triadic mother-father-infant relationship in order to capture co-parenting behaviours in the familial context.

Conclusion

This study offered new insights into the processes of parental mentalizing and contributed to the construct validity of the PEM assessment tool.

A major finding was that embodied processes appeared to develop naturally over time in the parent-infant relationship, and the change was not significantly influenced by therapeutic treatment. Interestingly, whilst this part of the study was based on an evaluation of treatment outcomes, the main findings highlight the importance of valuing growth and the actualisation of potential, perhaps from this perspective recognising empowering the individual, rather than emphasising treatment outcomes (Cooper, 2009).

Findings indicated that embodied processes were related to the quality of parent-infant interactions and maternal mental health. Indeed, there was a fluidity in the parents embodied capacities and over time, inter- and intrapersonal processes evolved within the dyadic relationship. This process of change appeared to occur at multimodal levels and between subjective and intersubjective experiences. The results contribute to evidence that implicit and explicit and mentalizing capacities are related yet distinct phenomenon.

The findings promote adopting a multifaceted approach in clinical practice and empirical research with parents and infants. Indeed, with the lack of treatment effects observed in the current study, it could be that work with families could be positioned from an orientation that facilitates natural growth and development. Yet, when therapeutic treatment is required and families do require psychological support, an integration of both implicit and explicit processes could be targeted in clinical interventions to improve outcomes for infants and their families for this generation and the next.

REFLEXIVITY

In this final section I reflect on the process of completing the thesis. I begin by outlining my background and interest into the study and how I came to undertake the research project. I then reflect on my role as a researcher and my influences on the research process.

Background to the Study

In 2009 I studied an MSc in psychoanalytic and developmental psychology at the Anna Freud Centre, University College London. As part of the course, we were required to observe a mother and her baby in their home once a week for up to a year. This was a unique experience and it was a privilege to have such an intimate opportunity to observe the relationship develop between a mother and her baby. In the psychoanalytically based observation seminars, we reflected on the process of conscious and unconscious interactions and I was particularly struck by the vivid discussions regarding the babies' experiences. It seemed remarkable to envision that babies could have such elaborate inner worlds and I was fascinated by how subtle interactions could potentially illuminate complex internal processes in the mother-infant dyad.

It was during the MSc that I met Dana Shai as she was developing PEM for her Ph.D. With my growing interest in infant observations and attachment relationships, I was excited to learn about PEM. Dana trained me on PEM and I went on to code her sample for her Ph.D. It was an inspiring learning experience to work so closely for Dana and I have been her research assistant since this time. Through Dana's work and collaborations, I have coded hundreds of parent-infant interactions using PEM and I learn something new in each observation. I am intrigued by how the variations of embodied interactions are embedded in each dyadic interaction and how the fleeting moments between a parent and infant can have such a profound influence on relational

dynamics. When I started the doctorate, I wanted to apply my skills and interest in PEM, and Dana introduced me to Professor Peter Fonagy and Tobias Nolte and the opportunity to code PEM on the original study arose. We discussed how I could contribute to the research and my aspirations for the project. I recognised it would be an ambitious study for a doctoral thesis but I was passionate to undertake the work. The thesis would be an innovative project, as PEM had not been assessed in a longitudinal study with a clinical sample. Furthermore, PEM had not been investigated with the range of variables that were available in the original study. A quantitative study alone would have provided important contributions to the literature, however I proposed the study could be enhanced by a mixed-methods design. I was aware that the PEM assessment provided rich qualitative data of the moment-to-moment dyadic interactions and I was interested to explore these narratives with the parent's verbal expressions of the relationship with their child in the PDI. These aims provided an initial framework for the study, and the research questions and design developed throughout the research process.

My Research Processes

In addition to my specialist interest in PEM, I worked therapeutically as Counselling Psychologist in training. From these experiences, I was keen to explore how PEM could be applied in clinical practice and together these two interests fundamentally shaped the direction of the study.

From the outset, I was clear that I wanted to investigate the effects of parent-infant psychotherapy on PEM. I later recognised with this question I had an assumption that therapy could enhance parental mentalizing and this belief was perhaps influenced by my role and values as a clinician. I considered that treatment would increase mother and infant outcomes and this would enhance the parent-infant relationship. Further, for

TA I provisionally intended to explore the treatment effects on parental mentalizing for dyads in the intervention condition only, however, my initial assumption was subsequently challenged when the original study was published and when I completed my own statistical analysis, which in both instances revealed limited treatment effects on relational outcomes. Pertaining to my results, I had to be flexible with the qualitative analysis and extracted dyads from both the intervention and control group. Extracting dyads from both groups was consistent with the quantitative findings and I considered this adaption to the research design widened the breadth of the project. To exclusively focus on dyads that had been offered the intervention could have excluded valuable insight into mentalizing processes that occurred for families without a specialist intervention, which therefore could indicate a naturally occurring process of mentalizing developments. Furthermore, with the focus on the intervention, the project would have been orientated towards an investigation of therapy outcomes. The adaption more accurately captured my intentions for the qualitative design as an exploration of mentalizing, but my initial bias towards therapeutic outcomes directed the preliminary research question.

It was important to bracket my biases in various aspects of the research process. In order to assess PEM, the coder is required to adopt a reflective stance and remain curious into the subjective states of the parent and infant. The rater may have personal judgements about the quality of parenting, however assessments are based on the parents capacity to kinesethically respond to the infants mental states, it is not a judgement on parenting skills. For instance, while I may have a preference for slower-paced interactions, I would not assign a low score to a fast-paced interaction if I judged the parent appropriately responded to the infant's kinesthethic signals. Moreover, PEM is a comprehensive coding system and it can take up to two hours to code each tape, this was a considerable challenge as I coded 153 tapes over a 14-month period for the

current study. With the extensive volume of data, it was important that I established a coding schedule and identified when I was not in the state of mind to accurately assess the videos. It was ethically and critically important that I remained an objective researcher and reliable rater in order not to lead to erroneous coding. I kept a reflective journal throughout the study and this helped me to take perspective from the intense nature of the work and recognise when I needed to take a break from coding.

As a Counselling Psychologist in training I was able to utilise my research and clinical skills in the project. In the final year I worked therapeutically in a perinatal parent-infant mental health service, and through this opportunity I was able to integrate theoretical insights from both my empirical and clinical practice. However, during the placement I worked with a similar clinical group to the research sample and it was integral to remain objective and detached from the data and not project my clinical experience onto the interpretation of the research findings. The reflective journal, supervision and reliability procedures helped to reduce my influences during the analytic stages.

The Research Design

For the study, I spent hundreds of hours dedicated to coding PEM and I felt a strong ownership of the PEM data; however, this inadvertently shifted my focus onto the measure. Through the coding processes, I became immersed in PEM and I noticed I was preoccupied with an intention to present findings that promoted the use of applying the measure in clinical practice. Whilst this aspect was important element of the project, I lost sight of the overall aims of the study. The thesis was not exclusively on PEM; rather it aimed to be a broader investigation of the relational processes of implicit and explicit mentalizing. To notice the patterns of my tendency to focus on both PEM and

clinical implications was an important reflection prior to qualitative analysis as my biases could have shaped the analytic process.

To undertake a secondary analysis inevitably created distance from the data. I included 11 measures from the original study taken over three time points and this presented challenges in terms of focusing the research questions, as well as managing a large dataset. Meanwhile, a significant tension was presented in that I did not administer or transcribe the PDIs. In my previous research experiences, I had associated interview-based studies with phenomenological paradigms, in which conducting the interview was a fundamental aspect of the project. It was through the creative process of designing the current study that I was able to develop an innovative method to approach the data and reflect on the broader implications of research paradigms. The research questions and design of the thesis was situated from a realist framework. The objective role of the researcher was consistent with realist epistemology and supported my detached position from the interview process. Whilst the separation from the participants challenged my phenomenological values as a practitioner, working through these tensions enabled me to have a richer awareness of the shifting positions of roles in research and clinical practice. I experienced the importance of identifying as an integrative practitioner, which enabled me to embody different roles and philosophical frameworks, which although different, were embedded in relational models. This will be important for my future development in which I hope to continue therapeutic work and research supporting family wellbeing.

The BPS (2007) posits that the Counselling Psychology division draws upon phenomenological models in both research and clinical practice. Indeed, in my cohort I felt somewhat separate, as the majority of the students conducted research based on traditional phenomenological approaches. I was concerned that a research design based on a realist epistemological framework was incongruent with the ethos of counselling

psychology. Yet, while realism underpinned the study, the focus of the project was embedded in an exploration of relational, subjective and intersubjective experiences, and rather than an emphasis on epistemology I wanted to concentrate on how I could accurately represent the data. Arguably, the project imbued counselling psychology values as it encapsulated integration. It utilised a mixed-method design appropriate to the research questions and explored verbal and nonverbal relational processes from the perspective of both the parent and infant. The integrative nature of the study mirrored my ethos as a member of counselling psychology, as I value the process of incorporating information from varied sources and perspectives as a process of enhancing knowledge and increasing awareness. Indeed, the research meetings with my cohort throughout the four years of training provided an invaluable space to challenge my assumptions of research designs and together as a group reflect on our personal and professional values as a member of the discipline. Moreover, these research meetings were very important as they often provoked fruitful discussions about each other's analysis and helped me critically engage with the research process.

Supervision

It was a privilege to be supervised by five expert professionals. Professor Peter Fonagy, Dana Shai, PhD and Tobias Nolte, MD were external supervisors and Dr Meredith Terlecki and Dr Yannis Fronimos were UEL internal supervisors. In addition, the study was part of a wider framework and Michelle Sleet and Tessa Baradon who co-authored the original study, offered guidance in accessing the dataset and shared their knowledge on the research design, as well as allowing me to attend training on Principles and Practice of Psychoanalytic Parent Infant Therapy and PDI RF (Appendix K). Although the thesis was an independent project, it was greatly supported by the knowledge and expertise of my supervisory and wider research and clinical team. Each

supervisor offered valuable insights into distinct aspects of the project and without their guidance I would not have been able to undertake such an extensive project.

The training courses that I attended (above) were enabled me to have fuller insight into the clinical intervention and empirical measure. For instance, as I gained awareness into the therapeutic model I had more of an understanding of how the findings from the current study could potentially be used clinically when working with children and their families. Furthermore, although the PDIs had already been assessed for RF, I wanted to extend my skills at extracting and interpreting information from the interviews.

There research process provided an opportunity for learning and development. For instance, a challenging phase of the study emerged during the statistical analysis. I was presented with a large and complex data set, and at the initial stages of analysis, I found myself feeling dependent on supervisors to direct the quantitative analysis. It became clear to me that I felt lost in the data and was confused when modelling syntax. There were many directions the analysis could have taken and I was required to take ownership of the data. I was guided to design statistical models and independently conduct the analysis. I became more autonomous in my research skills and I was required to critically address and justify the analytic procedure. Following each supervision meeting, I liaised with internal and external supervisors to enhance an integration of the research process. Together, these skills challenged me to take ownership of the project and develop my skills in collaborating with a supervisory team.

This project has offered significant experiences both personally and professionally. I am grateful to have gained such a unique insight into the developing relationship between a mother and her child. I hope this study can offer contributions to those who wish to understand more about how to support these relationships to offer the best start for children and their families.

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Appendices

Appendix A

University of East London Research Ethics Committee Approval

SIGNATURES

THE TYPING OF FULL NAMES BELOW WILL ACTS AS SIGNATURES

Student's name/signature: Rose Spencer

Student Number: u1328998

Course: Professional Doctorate in Counselling Psychology

Title of research: A New Shift? Explicit and implicit mentalizing in parent-infant
psychotherapy: A mixed methods design.

Date: 11.11.2015

I HAVE READ THE APPLICATION AND CONFIRM THAT THE PROPOSED
RESEARCH INVOLVES NO NEW PARTICIPANT RECRUITMENT OR DATA
COLLECTION

Supervisor's name/signature: Dr Meredith Terlecki

Date 11.11.2015

ATTACH ELECTRONIC COPIES OF SUPPORTING DOCUMENTS HERE

IF SCANNING NECESSARY DOCUMENTS IS NOT *AT ALL* POSSIBLE, SUBMIT
TWO HARDCOPIES OF YOUR APPLICATION (INCLUDING ALL
ATTACHMENTS) DIRECTLY TO THE HELPDESK. HARDCOPY APPLICATIONS
ARE TO BE SIGNED BY YOU AND YOUR SUPERVISOR AND DELIVERED TO
THE HELPDESK BY YOU.

For School use only

APPROVED Chair of School REC	YES	
Recommendations (if any) Date: Mark Finn. 13/11/15		

Appendix B

Original Study Ethics Approval

Camden & Islington Community Local Research Ethics Committee

Room 3/14
Third Floor, West Wing
St Pancras Hospital
4 St Pancras Way
London
NW1 0PE

25 May 2005

Prof Peter Fonagy
Chief Executive
Anna Freud Centre & University College London
21 Maresfield Gardens
London
NW3 5SD

Dear Prof Fonagy

Full title of study: *Helping parents with mental health problems to parent young infants: A randomised controlled trial of Parent-Infant Psychotherapy (PIP)*

REC reference number: 05/Q0511/47

Protocol number:

Thank you for your letter of 13 May 2005, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair and Ms Gillian Miles.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

The favourable opinion applies to the research sites listed on the attached form.

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document Type:	Version:	Dated:	Date Received:
Application	1	23/02/2005	25/02/2005
Investigator CV	1	23/02/2005	22/03/2005
Protocol	1	23/02/2005	25/02/2005
Covering Letter	1	23/02/2005	25/02/2005
Summary/Synopsis	2	13/05/2005	17/05/2005
Compensation	1	20/07/2004	25/02/2005

Arrangements			
Interview Schedules/Topic	1 - Family	23/02/2005	25/02/2005
Interview Schedules/Topic	1 The	23/02/2005	22/03/2005
Copy of Questionnaire	Social		22/03/2005
Copy of Questionnaire	GHQ-28		22/03/2005
Copy of Questionnaire	Pearlin and		22/03/2005
Copy of Questionnaire	Appendix N		22/03/2005
Copy of Questionnaire	BSI 18		22/03/2005
Copy of Questionnaire	BSI		22/03/2005
Copy of Questionnaire	PSI		22/03/2005
Copy of Questionnaire	1 - Child	23/02/2005	25/02/2005
GP/Consultant	1	18/02/2005	25/02/2005
Participant Information	2	13/05/2005	17/05/2005
Participant Consent	2	13/05/2005	17/05/2005
Response to Request for		13/05/2005	17/05/2005
Referrer Information	2	13/05/2005	17/05/2005
Inclusion/Exclusion	2	13/05/2005	17/05/2005
Referral Consent Form	1	23/02/2005	25/03/2005
GP letter	1	23/02/2005	22/03/2005
Grant Offer Letter		20/07/2004	23/03/2005

Management approval

The study should not commence at any NHS site until the local Principal Investigator has obtained final management approval from the R&D Department for the relevant NHS care organisation.

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

Notification of other bodies

The Committee Administrator will notify the research that the study has a favourable ethical opinion.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

05/Q0511/47**Please quote this number**

With the Committee's best wishes for the success of this

project, Yours sincerely

Stephanie Ellis**Chair**

E-mail: kathryn.simpson@camdenpct.nhs.uk

*Enclosures**Standard approval conditions**Site approval form (SF1*

**Camden & Islington Community Local Research
Ethics Committee**

LIST OF SITES WITH A FAVOURABLE ETHICAL OPINION

For all studies requiring site-specific assessment, this form is issued by the main REC to the Chief Investigator and sponsor with the favourable opinion letter and following subsequent notifications from site assessors. For issue 2 onwards, all

REC reference	05/Q0511/47	Issue number:	1	Date of issue:
Chief Investigator:	Prof Peter Fonagy			
Full title of study:	Helping parents with mental health problems to parent young infants: A randomised controlled trial of Parent-Infant			
<p><i>This study was given a favourable ethical opinion by Camden & Islington Community Local Research Ethics Committee on 25 May 2005. The favourable opinion is extended to each of the sites listed below. The research may commence at each NHS site when management approval from the relevant NHS care organisation has been confirmed.</i></p>				

Principal Investigator	Post	Research site	Site assessor	Date of favourable opinion for this site	Notes ¹
Professor Peter Fonagy		Children and Families Directorate, City & Hackney Teaching Primary Care Trust	East London & The City HA Local Research Ethics Committee 2	25/05/2005	

Approved by the Chair on behalf of the REC:

..... (Signature of Chair/Administrator*) (*delete as applicable)

..... (Name)

⁽¹⁾ The notes column may be used by the main REC to record the early closure or withdrawal of a site (where notified by the Chief Investigator or sponsor), the suspension or termination of the favourable opinion for an individual site, or any other relevant development. The date should be recorded.

Appendix C

Permission for Secondary Data Analysis

RESEARCH DEPARTMENT OF CLINICAL, EDUCATIONAL AND HEALTH PSYCHOLOGY
UCL PSYCHOLOGY



18th March 2015

To whom it may concern,

As the Principal Investigator of the Anna Freud Centre (AFC) Parent-Infant Psychotherapy Project Randomised Control Trial (PIP-RCT), I give permission for Rose Spencer to use data from the trial for an independent secondary data analysis for her research thesis during her training on the Doctorate in Counselling Psychology at the University of East London (UEL), (2014-2017). Miss Spencer will use the data for an investigation into the effects of parent- infant psychotherapy on Parental Embodied Mentalizing (PEM).

Supervision and support

I will provide external consultant supervision of Miss Spencer's project. Tobias Nolte will act as an external supervisor for data management and guidance through the data analytic process. Michelle Steed will oversee data collection of the PIP-RCT dataset. Dana Shai who is the author of the PEM measure, will provide external supervision for PEM coding. Miss Spencer will provide me with monthly summaries updating me of the progress of her research. Meetings will be held with supervisors when appropriate and at regular intervals.

External supervisors/support.

Professor Peter Fonagy. Relevant roles include being the Principal Investigator for the PIP-RCT and Chief Executive of the AFC.

Dana Shai, Ph.D. Research Unit Director at the Parent and Infant Relations (PAIR) Institute of Psychology Interdisciplinary Center (ICD), Israel.

Tobias Nolte, M.D. Clinical Research Fellow at University College London, Institute of Neurology.

Michelle Sleed, Ph.D. PIP-RCT Senior Researcher at the AFC.

Internal supervision at UEL.

Director of studies

Dr Meredith Terlecki. Clinical Psychologist and Senior Lecturer at UEL.

Second supervisor

Dr Yannis Fronimos. Counselling Psychologist and Senior Lecturer at UEL

Transfer and storage of data.

Miss Spencer has signed a confidentiality agreement and safeguarding of data with the AFC.

Adhering with the Data Protection Act (1998) the following measures have been stipulated to ensure confidentiality and safeguarding of data.

Tobias Nolte or Michelle Slead will supervise all data collection from the AFC. I give permission for the electronic files of the video-recordings of the mother-infant dyads to be transferred from the AFC and stored on an encrypted flash drive owned by Miss Spencer. The flash drive will be stored in a locked cabinet at her secure home address. The flash drive, cabinet and two sets of cabinet keys will be owned and accessed only by Miss Spencer. The location of these keys will not be shared with any other persons.

Coding of the data will take place at a secure home location on a personal password secure computer; any files that will be stored on the computer during coding will be stored in a password secure folder. The computer will be accessed only by Miss Spencer and all passwords will remain confidential.

Any interview transcripts or measures that may be used for purpose of the proposed study will be anonymised and copied on site at the AFC. The copies can be removed from the AFC and analysed at home. All files will be transferred and stored in the locked cabinet.

Following the transfer of data from the AFC, the locked cabinet, keys, encrypted flash drive, anonymised paper files and computer will not leave the secure home location at any point during the study. Following completion of the project, Miss Spencer will remove data from all devices and paper files destroyed.

The second coder for reliability of PEM coding, who will be assigned by Dana Shai will adhere to all above procedures.

Internal supervisors will provide support for data analysis and will review only anonymised data.

Yours sincerely,
Peter Fonagy



Professor Peter Fonagy, OBE, FMedSci, FBA, FBPSA PhD, DipPsy Director,
UCLPartners Mental Health and Wellbeing Programme National Clinical Advisor,
CYP-IAPT

Head of the Research Department of Clinical, Educational and Health Psychology
University College London

1-19 Torrington Place London WC1E 7HB

Tel: +44 (0)20 7679 1943

Fax: +44 (0)20 7916 8502

Email: p.fonagy@ucl.ac.uk

Appendix D

Confidentiality Form

Tel +44 (0)20 7794 2313
12 Maresfield Gardens, London, NW3 5SU
www.annafreud.org

Caring
for young
minds



Confidentiality Agreement

I understand that in having access to the Anna Freud Centre's data I am completely responsible for safeguarding the information that I am working with. This means that I will not discuss any of the confidential information disclosed to me with anyone, under any circumstances. I will not make copies of or share any confidential material from the Centre. I will ensure that all confidential data will be securely locked away when not in use, will not be used/viewed in public, and will be returned to the Anna Freud Centre when the work is complete.

Should I come across personal information relating to somebody whom I know or would be likely to have dealings with, I will avoid reading or viewing it, and will inform my Anna Freud Centre contact of the connection.

I realise that these restrictions are essential to protect the privacy of patients and research participants who have trusted the Centre to do this, and that the restrictions continue even after I have completed my work here at the Centre.

Date: 6/8/2014

Print Name: ROSE SPENCER

Signature: 

Appendix E

Participant Consent Form

Patient Identification Number:

CONSENT FORM

A study of psychological help for mothers with young babies

Name of Researchers: Peter Fonagy, Mary Target, Michelle Slead, Flavia Ansaldo

Please initial box

1. I confirm that I have read and understand the information sheet dated 05/2007 (version 4) for the above study and have had the opportunity to ask questions.

☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.

☐

3. I understand that I will be videotaped with my baby as part of the research.

☐

4. I agree for myself and my baby to take part in the above study.

☐

5. I agree for the video of play with my baby to be used for teaching professionals about baby development and behaviour (optional).

☐

Name of Parent

Date

Signature

Name of child

Researcher taking consent

Date

Signature

1 for patient; 1 for researcher; 1 for referring professional

Appendix F

Participant Information Sheet

A study of psychological help for mothers with young babies

You are being invited to take part in a research study. This information sheet is to answer some of your questions and to help you decide if you want to take part.

1. What is the purpose of the study and why have I been invited?

We understand that you and your doctor/ health visitor/ or other professional have spoken about some concerns about how you are feeling, or how your baby is doing. This study will compare a service called parent-infant psychotherapy with the services that are normally offered in your area. Parent-infant psychotherapy is a psychological service for mothers and babies together. We would like to see how well it works compared to the services that are usually available. This study will help us to find out in what ways these different services will benefit different families.

2. Do I have to take part?

No, it is up to you to decide whether or not to take part. If you decide to take part you are still free to change your mind at any time and without giving a reason. A decision to pull out of the study at any time will not affect the standard of care you receive. If you would like to receive treatment but not take part in the study, the person who has referred you can discuss the treatment options with you.

3. What will I have to do if I take part?

If you decide to take part in the study, a researcher will see you and your baby together. This can be done either at the Anna Freud Centre or in your home, whichever you prefer. During these interviews, you will be asked some questions about how you think you and your baby are doing and you will complete some questionnaires with the researcher.

Sometimes we might find out from this first interview that the study is not quite right for some mothers and babies. If this happens, the researcher will discuss this with you and you will not be included in the study. If you do still wish to receive some kind of help, you can discuss other options with the person who referred you to the study.

If you think the study is suitable for you and it's something you are interested in doing, you will either receive parent-infant psychotherapy or you will receive what we call "treatment as usual". If you are placed in the "treatment as usual" group, you will continue to receive the care/treatment you have from your GP, health visitor, mental health team, psychiatrist, etc. If you are in the "parent-infant psychotherapy group", you will be offered appointments with a parent-infant psychotherapist in addition to the services you already use.

Because we don't know which of the two types of support is better for which people, we need to place people to both types of support and then compare them. The group you are placed in will be done by a computer and you have a 50:50 chance of being in either one. You will not be able to choose which group you go to. The research psychologist will let you know which one you will be receiving.

By taking part in the study you and your child will be seen by a researcher 3 times in one year. The researcher will complete a set of questionnaires with you about how you are feeling, what it's like for you to be a parent, and about your experience of services you have used. We will also do a simple assessment of your baby's development by playing some games with him or her, and we will video-record you and your baby spending time together for a little while.

At the 6-month follow-up, we will also ask if you are willing for your baby to take part in a study of infant brain development. During this we will record tiny electrical impulses that are naturally made by your baby's brain using sensors on your baby's scalp. The sensor net doesn't produce any electricity, it only measures the electrical impulses your baby's brain naturally creates. The procedure is non-invasive and won't harm your baby in any way. For your baby it will be the same feeling as wearing a hat. This is voluntary and will be up to you to whether or not you would like your baby to take part. It is perfectly normal for these recordings to look different from one baby to another. In the unlikely event that we were to detect anything that might give cause for concern, we would discuss this with you and, with your permission, inform your baby's GP. At the 12 month follow-up we will ask you and your child if you would be willing to do an experiment which involves you and your child being together and then

separating for short time periods so that we can see how these separations are for your child. Again, this is voluntary and it will be up to you if you would like to do it or not. These research assessments will probably take between one-and-a-half to two-and-a-half hours at each time point.

4. Will it be difficult to do?

Parents usually find the questionnaires quite interesting, and talking over their relationship with their baby is often enjoyable or helpful. Finding that problems have improved in later assessments is good to know. The babies enjoy the simple tests (which are like the ones doctors use in Well Baby Clinic checks), and their parents enjoy seeing what their baby can already do.

5. What are the possible disadvantages and risks of taking part?

Sometimes the questionnaires and interviews used in this study can be a bit upsetting because they include asking about any problems you are having. However, this would probably be no more difficult than when you discussed the same things with your doctor or health visitor. It does take some time (about two hours at three different time points), and that might be difficult if you are very busy.

6. What are the possible benefits of taking part?

The study gives you the chance to be offered help with any problems you have for yourself and your baby. Both parent-infant psychotherapy and the community services that are normally offered have been very helpful for many parents and children. Also, the information we get from this study will help us in the future to provide the best services to other families with young children experiencing difficulties. So if you take part you will know that you are making a difference for others like you.

7. What if something goes wrong?

If you are not happy with anything about the research or if you want to talk to somebody about the study, you may contact any of the people listed at the end of this information sheet.

8. Will my taking part in this study be kept confidential?

The information you give will be kept very private. We make sure of this by keeping the questionnaires and videotapes locked away, and we will not write your name or any other personal details on any of these. All personal information you give us will be remain locked away and then destroyed after 5 years. When we report the results of the study, we will not include any personal details about any of the families that took part so that they can be recognised. Only the research staff will be able to look at the information you give us. Your General Practitioner will be sent a letter saying that you have agreed to take part in the study and which treatment group you have been put in. However, your doctor and practice staff will not need to be told about your assessments or what is discussed in the therapy, except in very rare cases if there is serious risk to you or your baby, which is not already known to your doctor. If that happened, of course we would talk to you about this as well as to your doctor.

9. Who is organising the research?

This study is being conducted by the Anna Freud Centre. The study has been approved by a local research ethics committee.

10. Contact for Further Information

If you would like further information about the study, you can contact the Research Psychologist:

Flavia Ansaldo

Anna Freud Centre, 21 Maresfield Gardens , NW3 5SD

Telephone: 020 74432216

Email: Flavia.ansaldo@annafreud.org

Or you could contact the Chief Investigator of the study:

Prof Peter Fonagy

Anna Freud Centre, 21 Maresfield Gardens , NW3 5SD

Telephone: 020 76795960

Email: P.Fonagy@ucl.ac.uk

Thank you for your time

Appendix G

Version 3 09/2007

Family Background Interview

Family ID: _____ Date 1: _____ Date Bayley: _____

1. Mother's date of birth: _____

2. Mother's ethnic status: _____

3. Child's date of birth: _____ Prematurity: _____

4. Child's gender: _____

5. Child's ethnic status: _____

6. Mother's marital status: _____

7. Mother's highest level of education: _____

8. Child's position in family (e.g. youngest of 3): _____

9. Who else lives in your household **other than** you and (baby's name)?

Relationship to mother (e.g. husband, child, stepchild, partner)	Date of birth (dd/mm/yy)	Gender (M or F)
1.		
2.		
3.		
4.		
5.		
6.		
7.		

10. Do you own it or rent your home? If renting, is it private, council or HA rented?

11. How many bedrooms are there in your home? _____

12. Is your family eligible for income support?

Yes ☐ No ☐

13. Are you currently employed?

Yes ☐ No ☐

If yes: Are you full-time ☐ or part-time ☐

If no: How long have you not been working for? _____

14. How long have you lived in the neighbourhood you live in now?

15. Do you have any support from family/friends/neighbours that live in your area?

Yes ☐ No ☐

Details: (Prompt- Who? How many people? Are they available to call upon in an emergency? What type of support? Do you feel isolated?)

Tape record from here

16. Just to start with, can you tell me a little bit about the reason you were referred?

17. How do you feel you cope with the demands of parenting a young baby?

18. Have there been any other outside stresses or life events that have made it more difficult to cope with the demands of parenting?

19. How do you think the stresses that you have felt have affected (baby's name)?

20. How would you describe your physical health right now?
(prompt for physical disabilities and illnesses and the chronicity)

21. And how would you describe your emotional well-being right now?

22. Have you ever had a psychiatric diagnosis in the past?

23. Have you ever been addicted to any types of medication, drugs or alcohol (prompt for current addictions)?

24. Do you have any concerns about your baby?

ONLY CONTINUE IF ALL INCLUSION AND EXCLUSION CRITERIA MET

I would like to hear a little bit more now about what you would expect and hope for from any support service you might have contact with.

25. If you could think of a service that would be helpful to you and your baby, what would it be like? What would really help you?

26. What would you like to change with the help of a support service?

27. Is there anything in particular that you hope not to happen when you have contact with a service? What would you find difficult or unhelpful?

THANK YOU FOR YOUR TIME
RESEARCHER TO COMPLETE:

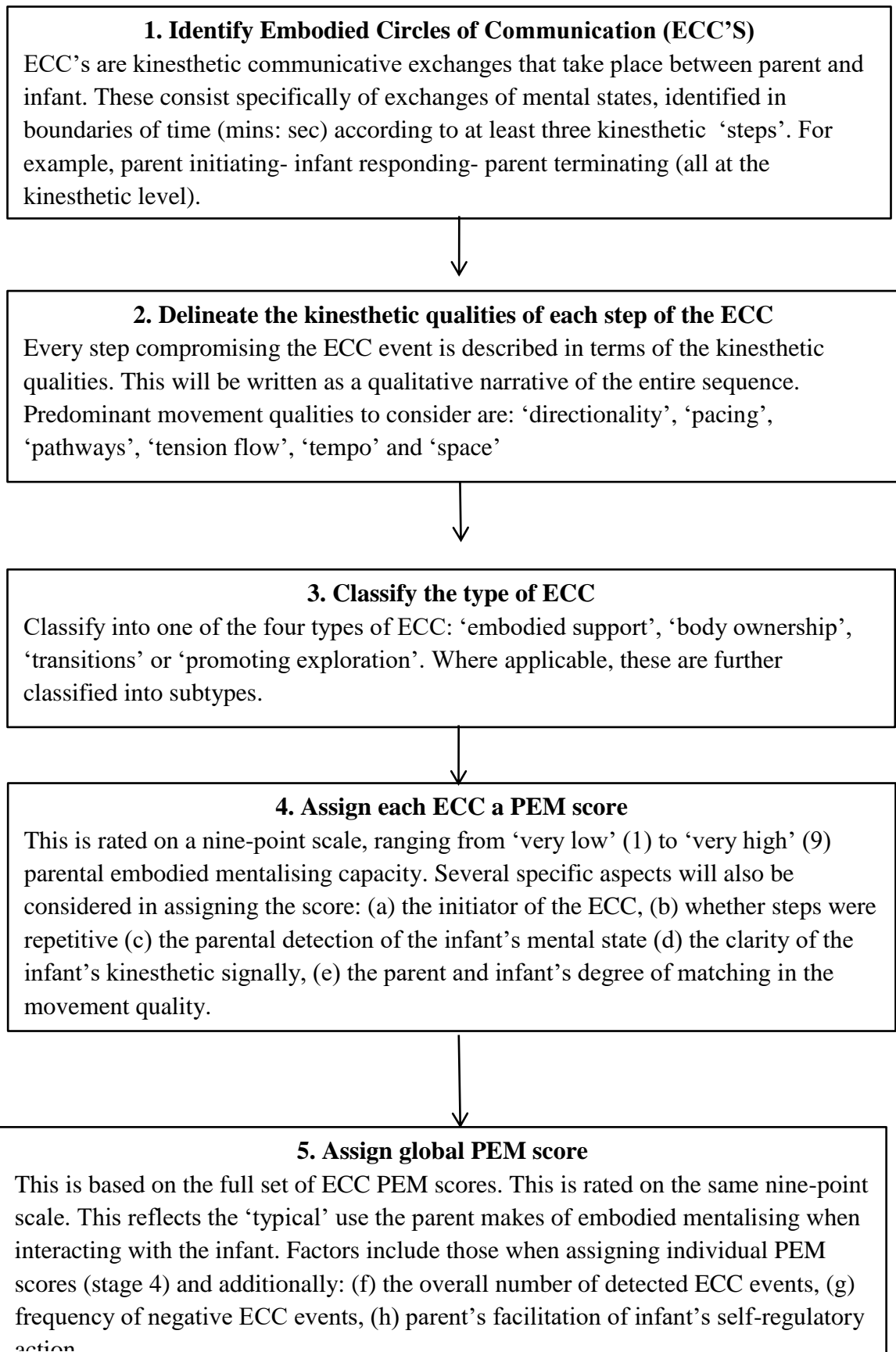
Indicators of social exclusion: (tick all that apply)

- a) Low income household (eligibility for income support)
- b) Long term unemployment (>2 years)
- c) Temporary or overcrowded accommodation (more than 2 persons per room)
- d) Single or unpartnered
- e) Presence of chronic physical illness or disability
- f) Early childhood history of foster or institutional care
- g) Social isolation associated with recent relocation
- h) Less than 20 years of age
- i) Previous diagnosis of non-psychotic psychiatric illness

Appendix H

Summary of PEM Coding Process.

Adapted from PEM Coding Manual Version 2.0 (Shai, 2013) with permission from D. Shai, 2017



Global PEM Scores Summary

Adapted from PEM Coding Manual Version 2.0 (Shai, 2013) with permission from D. Shai, 2017

<p style="text-align: center;">Low</p> <p>Score 1.</p> <ul style="list-style-type: none"> • Parent demonstrates severe difficulty to acknowledge the infant as a mental entity. • The infants mental state is expressed clearly for an extended amount of time. • Parent does not repair the rupture, instead acts on their own mental state. • Parent may violently present an object to infant, or placing infant at physical danger. • Parent is hostile, or there is evidence of conflict. <p>Score 3</p> <ul style="list-style-type: none"> • Parent has difficult mentalizing, yet it is not entirely absent. • The infant’s mental state is pronounced. • Parent has difficulty repairing their kinesthetic response. • The kinesthetic interactions are basic and concrete. 	<p style="text-align: center;">Mid (PEM Present)</p> <p>Score 5</p> <ul style="list-style-type: none"> • Parent perceives the infant as a mentalistic entity • There is a basic appreciation of infant’s mental state • The parent is more able to appreciate and respond to infant over positive, rather than negative states. • Infant mental states tends to be clear. • The interactions are more likely to be short-non elaborate.
<p style="text-align: center;">High</p> <p>Score 7</p> <ul style="list-style-type: none"> • There is a complex recognition and appreciation of the infant’s mental state. • Parent acknowledges their own mental state influences infant’s. • Where there is a rupture of an interaction, there is a quick repair. • Infant’s signaling can be unclear. • Parent presents alternatives when he or she is unwilling to act upon the infant’s mental state. • Parent responds to both positive and negative mental states • Parent modifies a negative interaction into a positive interaction in an elaborate and complex way <p>Score 9</p> <ul style="list-style-type: none"> • Infant’s mental state is fully expressed. • Parent detects infant’s subtle mental states • The parent repairs ruptures very quickly. • There is a wider variety of movement qualities • Interaction is full of positive event 	

Summary of Classifying Embodied Circle of Communication (ECC)

Adapted from PEM Coding Manual Version 2.0 (Shai, 2013) with permission from D. Shai, 2017

ECC Theme	ECC Subtheme	Distinctions of the kinesthetic interaction
1. Embodied Support The parent's ability to use their body to support when interacting with the infant.	5. Sculpting	This involves changes in the parent's body shape and posture. This does <i>not</i> include physical contact. Parents are both present and readily available for support.
	6. Holding	The parent uses their own body to offer physical support to the infant.
2. Body Ownership This reflects how the infant is treated as the owner of their body and how the parent's kinesthetic interactions appreciate that the separation of bodies is an indication of separateness of minds.	7. Body investigation	When the <i>infant</i> explores the parent's and their own body. How the parent lends their body to this investigation is a vital consideration.
	8. Body manipulation	The parent uses their own body to create movement in the infant's entire body and/or body parts (such as hands, legs, arms). This is an attempt to <i>playfully</i> interact with the infant.
	9. Body stimulation	Parent directly stimulates (such as tickling, stroking, kissing) the infant entire and/or parts of body. This is more superficial than manipulation and infant has most control over his or her body.
3. Transition	10. No subtype	The parent shifts the infant's entire body from one plane (e.g., from sitting to standing) and/or spatial location (e.g., from the matt to parent's lap). Transitions serve as a <i>function</i> .
4. Promoting Exploration	11. No subtype	Parent and infant engage in kinesthetic interactions through the environment. Typical objects include, books, toys and fabrics.

Insert PEM Coding Sheet

Insert example of PEM coding sheet

Appendix I

Outcomes Measures from the Original Study

General Health Questionnaire

Please answer ALL the questions by circling the answer which you think most nearly applies to you. In the last two weeks, have you:

1. Been feeling perfectly well and in good health?	Better than usual	Same as usual	Worse than usual	Much worse than usual
2. Been feeling in need of a good tonic?	Better than usual	Same as usual	Worse than usual	Much worse than usual
3. Been feeling run down and out of sorts?	Better than usual	Same as usual	Worse than usual	Much worse than usual
4. Felt that you are ill?	Better than usual	Same as usual	Worse than usual	Much worse than usual
5. Been getting any pains in your head?	Better than usual	Same as usual	Worse than usual	Much worse than usual
6. Been getting a feeling of tightness or pressure in your head?	Better than usual	Same as usual	Worse than usual	Much worse than usual
7. Been having hot or cold spells?	Better than usual	Same as usual	Worse than usual	Much worse than usual
8. Lost much sleep over worry?	Better than usual	Same as usual	Worse than usual	Much worse than usual
9. Had difficulty in staying asleep once you are off?	Better than usual	Same as usual	Worse than usual	Much worse than usual
10. Felt constantly under strain?	Better than usual	Same as usual	Worse than usual	Much worse than usual
11. Been getting edgy and bad-tempered?	Better than usual	Same as usual	Worse than usual	Much worse than usual
12. Been getting scared or panicky for no good reason?	Better than usual	Same as usual	Worse than usual	Much worse than usual
13. Found everything getting on top of you?	Better than usual	Same as usual	Worse than usual	Much worse than usual
14. Been feeling nervous and strung-up all the time?	Better than usual	Same as usual	Worse than usual	Much worse than usual
15. Been managing to keep yourself busy and occupied?	Better than usual	Same as usual	Worse than usual	Much worse than usual

16. Been taking longer over the things you do?	Better than usual	Same as usual	Worse than usual	Much worse than usual
17. Felt on the whole you were doing things well?	Better than usual	Same as usual	Worse than usual	Much worse than usual
18. Been satisfied with the way you've carried out your task?	Better than usual	Same as usual	Worse than usual	Much worse than usual
19. Felt that you are playing a useful part in things?	Better than usual	Same as usual	Worse than usual	Much worse than usual
20. Felt capable of making decisions about things?	Better than usual	Same as usual	Worse than usual	Much worse than usual
21. Been able to enjoy your normal day-to-day activities?	Better than usual	Same as usual	Worse than usual	Much worse than usual
22. Been thinking of yourself as a worthless person?	Better than usual	Same as usual	Worse than usual	Much worse than usual
23. Felt that life is entirely hopeless?	Better than usual	Same as usual	Worse than usual	Much worse than usual
24. Felt that life isn't worth living?	Better than usual	Same as usual	Worse than usual	Much worse than usual
25. Thought of the possibility that you might make away with yourself?	Better than usual	Same as usual	Worse than usual	Much worse than usual
26. Found at times you couldn't do anything because your nerves were too bad ?	Better than usual	Same as usual	Worse than usual	Much worse than usual
27. Found yourself wishing you were dead and away from it all?	Better than usual	Same as usual	Worse than usual	Much worse than usual
28. Found that the idea of taking your own life kept coming into your mind?	Better than usual	Same as usual	Worse than usual	Much worse than usual

The Test of Nonverbal Intelligence

Subject to copyright

The Test of Nonverbal Intelligence (TONI-3; Brown, Sherbenou & Johnsen, 1997).

This test is a language-free measure of cognitive ability. It is an intelligence test that is unlikely to be affected by cultural and language differences and was selected as the most appropriate measure for this demographically diverse sample. The test yields a single score for nonverbal problem-solving ability and scores are standardized with large population norms. Raw scores are converted to percentile ranks and to deviation quotients with a mean of 100 and a standard deviation of 15 points.

Mother Object Relations Scale

MY BABY:	
Please circle one of the choices for each of the questions below. There are no 'right' or 'wrong' answers; many of these are true of all babies at times.	
1. My baby smiles at me -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never
2. My baby annoys me -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never
3. My baby likes doing things with me -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never
4. My baby 'talks' to me -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never
5. My baby irritates me -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never

6. My baby likes me -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never
7. My baby wants too much attention -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never
8. My baby laughs -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never
9. My baby gets moody -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never
10. My baby dominates me -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never
11. My baby likes to please me -	
	5 Always 4 Very often 3 Quite often 2 Sometimes

	1 Rarely 0 Never
12. My baby cries for no obvious reason -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never
13. My baby is affectionate towards me -	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never
14. My baby winds me up	
	5 Always 4 Very often 3 Quite often 2 Sometimes 1 Rarely 0 Never

Parent Development Interview- Revised

Copyright protected – summary of measure

Parent Development Interview- Revised (PDI-R; Aber, Slade, Berger, Bresgi & Kaplan, 2004). The PDI-R is semi-structured interview that taps into parental representations of themselves as parents, their child and the relationship. Questions are designed to capture parents' understanding of their own and their child's thoughts, feelings and behaviours. Interviews were transcribed verbatim and coded by trained raters on two coding systems.

A. View of the Child.

- I'd like to begin by getting a sense of the kind of person your child is... so, could you get us started by choosing 3 adjectives that describe your child?

B. View of the Relationship

- Describe a time in the last week when you and (your child) really "clicked".
(Probe if necessary: Can you tell me more about the incident? How did you feel?
How do you think (your child) felt?

C. Affective Experience of Parenting

- Tell me about a time in the last week or two when you felt really angry as a parent. (Probe, if necessary: Can you tell me a little bit more about the situation?

D. Parent's Family History

- **Copyright protected – summary of measure**

E. Separation/Loss

- **Copyright protected – summary of measure**

F. Looking Behind, Looking Ahead

- **Copyright protected – summary of measure**

Assessment of Representational Risk

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Assessment of Representational Risk (ARR; Sleed, 2013). The ARR measures specific qualities of caregiver representations that are prevalent in less optimal parenting. It has been developed to be applied to the parental narratives from the Parent Development Interview (PDI; Slade et al., 2004). The coding system has 10 dimensions:

Hostility – parents experience

Hostile/frightening parent behaviour

Fearful affect

Helplessness

Emotional distress

Idealisation

Enmeshment/Role reversal

Incoherence

Supportive presence

Mutual enjoyment

Verbatim transcripts from PDI interviews are rated on each of these dimensions. The ratings are on a Likert-type scale from one to five. These scores are based on frequency and intensity.

Ainsworth's Strange Situation Procedure (SSP)

Summary of Coding

Strange Situation Procedure (SSP; Ainsworth, Blehar, Waters & Wall, 1978)

The SSP was carried out to assess the child's attachment behaviour to his/her mother at the twelve month follow-up. SSP is standardized laboratory procedure involving a series of separations and reunions between the mother and infant. The procedure was videotaped and coded by a trained and reliable coder who was independent of the project and blind to treatment assignment. The infant attachment behaviour was rated and classified on three primary (secure, insecure-avoidant, insecure-resistant), and one secondary (disorganized) classification. The test is conducted in a room with a one-way window and a collection of toys for the infant to explore. There are two chairs, one for the parent to sit in and a chair for the research assistant

Episode 1. Mother and baby are introduced into the room (1 minute).

Episode 2. Mother and baby play (3 minutes).

Episode 3. Experimenter enters, sits quietly (1 minute) talks to the parent (1 minutes) and sits on the floor to engage with the baby (1 minute).

Episode 4. Mother leaves the room.

Episode 5. Mother returns and experimenter leaves the room. (3 minutes).

Episode 6. Mother leaves (3 minutes).

Episode 7. Experimenter returns (3 minutes).

Episode 8. Parent returns and experimenter leaves the room.

Classifications are based on the child's behaviour directed towards the parent in the reunion episodes.

Secure behaviour

The infant may cry, and will acknowledge the parent on return. The child can return to play when comforted and there is no angry contact with the parent.

Insecure avoidant behaviour

Less likely to cry and may ignore the parent on reunion. The child may continue to play without approaching the parent.

Insecure resistant

Crying during the separation. May seek comfort and then signal to be out down. Little approach to the parent on reunion, could become angry and hit out against the toys.

Disorganized

The child exhibits a wide range of odd and out of context behaviour. There may be some fleeting moments of ordinary attachment behaviour.

Additional reference

Waters, E. (2012). *The Ainsworth Strange Situation*. Online lecture:

http://www.psychology.sunysb.edu/attachment/video_contents/Strange_Situation_Slides_c2012_EWATERS.pdf

CES-D

Now I have some questions about your feelings during the PAST HOUR. For each of the following statements please circle the number that is under the words that describe how you felt: rarely or none of the time, some of the time, much of the time, most or all of the time

		Rarely or none of the time	Some of the time	Much of the time	Most or all of the time
1.	I was bothered by things that usually don't bother me	0	1	2	3
2.	I did not feel like eating; my appetite was poor.	0	1	2	3
3.	I felt that I could not shake off the blues even with help from my family or friends.	0	1	2	3
4.	I felt I was just as good as other people	0	1	2	3
5.	I had trouble keeping my mind on what I was doing.	0	1	2	3
6.	I felt depressed.	0	1	2	3
7.	I felt that everything I did was an effort.	0	1	2	3
8.	I felt hopeful about the future.	0	1	2	3
9.	I thought my life had been a failure.	0	1	2	3
10.	I felt fearful.	0	1	2	3
11.	My sleep was restless.	0	1	2	3
12.	I was happy.	0	1	2	3
13.	I talked less than usual.	0	1	2	3
14.	I felt lonely.	0	1	2	3
15.	People were unfriendly.	0	1	2	3
16.	I enjoyed life.	0	1	2	3
17.	I had crying spells.	0	1	2	3
18.	I felt sad.	0	1	2	3
19.	I felt that people dislike me.	0	1	2	3
20.	I could not get "going."	0	1	2	3

Brief Symptom Inventory**BSI**

Below is a list of problems that people sometimes have. Please read each one carefully and circle the number that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. Circle only one number for each problem and do not skip any items.

0 = Not at all

1 = A little bit

2 = Moderately

3 = Quite a bit

4 = Extremely

		Not at all	A little bit	Moderately	Quite a bit	Extremely
1.	nervousness or shakiness inside	0	1	2	3	4
2.	faintness or dizziness	0	1	2	3	4
3.	the idea that someone else can control your thoughts	0	1	2	3	4
4.	feeling others are to blame for most of your troubles	0	1	2	3	4
5.	trouble remembering things	0	1	2	3	4
6.	feeling easily annoyed or irritated	0	1	2	3	4
7.	pains in heart or chest	0	1	2	3	4
8.	feeling afraid in open spaces or on the streets	0	1	2	3	4
9.	thoughts of ending your life	0	1	2	3	4
10.	feeling that most people cannot be trusted	0	1	2	3	4
11.	poor appetite	0	1	2	3	4

		Not at all	A little bit	Moderately	Quite a bit	Extremely
12.	suddenly scared for no reason	0	1	2	3	4
13.	temper outbursts that you could not control	0	1	2	3	4
14.	feeling lonely even when you are with people	0	1	2	3	4

Parenting Stress Inventory Short Form

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Parenting Stress Inventory Short Form (PSI:SF; Abidin, 1995). The PSI:SF is a 36-item questionnaire that measures stress level experienced within the parenting role. Items are rated on a five-point scale and the measure contains three subscales pertaining to parenting stress. The Difficult Child (DC) subscale assesses the degree to which parents are bothered by behavioral characteristics of their children that make them difficult to manage. The Parent-Child Dysfunctional Interaction (P-CDI) subscale focuses on the degree to which parents are satisfied with their children's abilities to meet their expectations. The Parental Distress (PD) subscale determines the distress parents feel as a function of personal factors directly related to parenting.

Maternal Sense of Mastery

Copyright protected – summary of measure

Maternal Sense of Mastery (MMS; Mastery Scale, Pearlin & Schooler, 1978). The MMS was measured by a seven- item Self-Mastery Scale (Pearlin & Schooler, 1978) asks participants to respond to the extent that they feel some control over their life's chances, as opposed to feeling ruled by fate. Responses indicating agreement to disagreement are based on a seven- point scale, with higher scores indicative of a higher sense of mastery.

Total self-mastery score potential range 7-49.

Bayley Scales of Infant Development, Third Edition

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Bayley Scales of Infant Development, Third Edition (BSID III; Bayley, 2006a) is an assessment-based measure that evaluates a child's cognitive, language and motor functioning. BSID-III can be used with infants and children aged between 1 and 42 months and are administered by a trained and experienced evaluator.

The test yields composite scores for each domain which are standardized by age with norms from a large sample (mean 100, standard deviation 15). These scores can also be converted to percentile ranks.

- cognitive composite score, standardized with mean 100, *SD* 15
- cognitive percentile rank
- language composite score, standardized with mean 100, *SD* 15
- language percentile rank
- motor composite score, standardized with mean 100, *SD* 15
- motor percentile rank

Emotional Availability Scales

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Emotional Availability Scales (EA; Biringen, Robinson, & Emde, 1993). The EA is an observational assessment that measures the emotional availability of the parent to child and child to the parent. Emotional availability refers to a person's ability to express their emotions and to perceive and respond to the emotional needs and goals of another (Emde, 1980). The scales are comprised of four parental dimensions (sensitivity, structuring, non-intrusiveness and non-hostility) and two infant dimensions (responsiveness and involvement). Each of the six dimensions is rated on 9-, 7-, or 5-point Likert type scales.

- Sensitivity, range 1-9
- Structuring, range 1-5
- Non-hostility, range 1-5
- Non-intrusiveness, range 1-5
- Child involvement, range 1-7
- Child responsiveness, range 1-7
- Total EA score, potential range 6-38

Coding Interactive Behavior

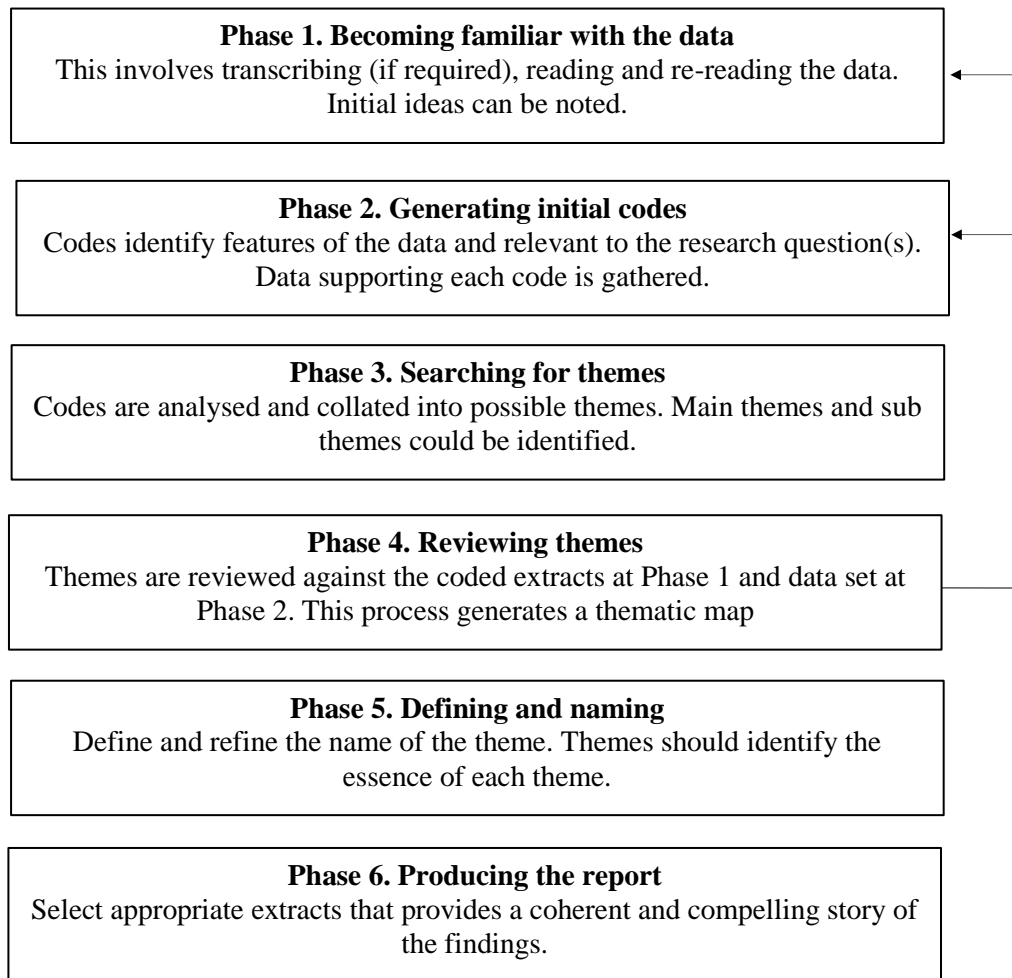
Copyright protected – summary of measure

Coding Interactive Behavior (CIB; Feldman, 1998). The CIB is an observational coding assessment and used to rate -recorded parent-infant interactions. The CIB scales are comprised of 45 discrete items which are rated on a 5-point scale for the frequency and intensity that the behaviour is observed (22 items relating to parental behaviour, 16 items relating to the child's behaviour, and 5 items relating to the quality of dyadic interaction as a whole).

- **Dyadic attunement:** The items in this subscale reflect an overall mutuality between parent and infant. The factor relates to an interaction where the parent is sensitive, non-intrusive, consistent and supportive. There is no tension or constriction and the interaction is reciprocal and well adapted to the affective state of each partner. Potential range = 11-55
- **Parental positive engagement:** This subscale relates to interactions where the parent looks and talks at her baby positively, does not appear depressed, and is enthusiastic in engaging with her baby. Potential range = 5-15
- **Child involvement:** This subscale incorporates most of the items relating to the infants' behaviour. High scores reflect infants who are clearly positively involved in the interaction through gaze, vocalization and initiation of mutual contact. Potential range =6-30

Appendix J

Overview of Thematic Analysis Process



Stage 1: Extract from Parent Development Interview

Coding Process

(Note- original line numbers not inserted due to formatting of transcripts for appendices)

I: Uhm... Alright. So, the next [?] move on to, uhm, your experience of being a parent. So, it's not been too long but we'll try and do our best. But, uhm, can you maybe think of, uhh, again three words that describe you as a parent and then we'll go over them again.

P: [sighs]... Uhm... Describes me as a parent... Shell-shocked [laughs]

I: [laughs]. Yeah.

P: Unprepared

I: Ok

P: Uhm... I don't know [inaudible] it's difficult to think of that one... But it's been enjoyable.

I: Ok

P: It's a good experience

I: Ok. So, the first one was shell-shocked. Can you think of a memory or an incident that makes you kind think of that word as you as a parent

P: The last seven weeks. It's... It's... When you first have the baby... like... You get used to being pregnant, you spent nine months pregnant or nine and a half months...

I: Yeah

P: ... and... Unless you sort of plan for it you don't... can't sort of get your head around the fact there's gonna be a baby at the end of this.

I: Yeah.

P: And I think... sort of from the minute she was born I was just like "Oh my God, what was that. I can't believe I've had a baby."

I: Yeah.

P: That sort of... It was [? 11:50, numbing?], very, very [?].

I: Hmm. And it still is at the moment? Do you think?

P: Yeah.

I: Yeah.

P: I think it will be for a while [laughs].

I: Ok. Uhm... Unprepared was the next word.

P: Yeah. I wasn't... I thought mentally I was ready for this and it'd just come to such a complete shock that... I wasn't prepared for anyway at all. I knew it was gonna be hard, don't get me wrong, I'm not that ignorant, you know what I mean. I didn't think it was gonna be easy. But I wasn't prepared to do it on my own either which was... 'Cause obviously if I had my partner with me it sort would be easy.

Extract from Parent Development Interview

Coding Process

(Note- original line numbers not inserted due to formatting of transcripts for appendices)

Interview Transcript	Initial Codes
I: Uhm... Alright. So, the next [?] move on to, uhm, your experience of being a parent. So, it's not been too long but we'll try and do our best. But, uhm, can you maybe think of, uhh, again three words that describe you as a parent and then we'll go over them again.	
P: [sighs]... Uhm... Describes me as a parent... Shell-shocked [laughs].	<i>Shocked- trauma- overwhelmed Then laughs- incongruent</i>
I: [laughs]. Yeah.	
P: Unprepared	<i>Not psychologically ready</i>
I: Ok	
P: Uhm... I don't know [inaudible] it's difficult to think of that one... But it's been enjoyable.	
I: Ok	
P: It's a good experience	<i>Contrast to shocked- hard to stay with feelings</i>
I: Ok. So, the first one was shell-shocked. Can you think of a memory or an incident that makes you kind think of that word as you as a parent	
P: The last seven weeks. It's... It's... When you first have the baby... like... You get used to being pregnant, you spent nine months pregnant or nine and a half months...	<i>Difficult to transition from pregnancy- new role</i>
I: Yeah.	
P: ... and... Unless you sort of plan for it you don't...	<i>Not psychologically</i>

can't sort of get your head around the fact there's	<i>prepared-unreflective</i>
gonna be a baby at the end of this.	<i>Baby- distant</i>

I: Yeah.

P: And I think... sort of from the minute she was born I	<i><u>That</u>- seems disbelief-</i>
was just like "Oh my God, what was that. I can't	<i>unconnected</i>
believe I've had a baby."	

I: Yeah.

P: That sort of... It was [? 11:50, numbing?], very, very [?].

I: Hmm. And it still is at the moment? Do you think?

P: Yeah.

I: Yeah.

P: I think it will be for a while [laughs].

I: Ok. Uhm... Unprepared was the next word.

P: Yeah. I wasn't... I thought mentally I was ready for	<i>Did not prepare herself</i>
this and it'd just come to such	<i>psychologically</i>
a complete shock that... I wasn't prepared for anyway	<i>Anticipating it would be</i>
at all. I knew it was gonna be hard, don't get me	<i>difficult</i>
wrong, I'm not that ignorant, you know what I mean. I	<i>Absent figure?</i>
didn't think it was gonna be easy. But I wasn't	<i>Feeling unsupported</i>
prepared to do it on my own either which was...	<i>Expectations would</i>
'Cause obviously if I had my partner with me it sort	<i>parenthood could be easier</i>
would be easy.	<i>otherwise- emphasis on</i>
	<i>feeling abandoned</i>

**Observational Extract from Parental Embodied Mentalizing Coding Sheet for
Early Parent-infant Interaction**

*(Note- original line numbers not inserted due to formatting of transcripts for
appendices)*

Mother transitions infant into her chest, she sculpts her body within this *sculpting within
this*

Pacing

Mother repeats- she abruptly lifts the infant from under the arm and manipulates the
infant's arm to point to the camera / researcher.

The infant's body awkward as mother talks to the researcher

Pacing

with a mid tempo, mother bounces infant on her knee and sculpts her upper body over
the infant

brief, gentle

tempo-tension flow

Mother holds infant's body and within this she lowers her head-mother increases the
tempo as she bounces the infant and leans closer into the infants kinesphere. The infant
increases in tension flow and her body tightens- mother turns her body and directs to the
researcher

Pacing-tension flow

Mother extends and reaches for a rattle. With a fast pace she directs this across the
linear pathway to infant. The mother holds the rattle close into infant's face- -The infant

extends out with her arms and pushes against the toy- her body stiffens and becomes rigid, her arms closed across her body- her body shrinks and increases in tension flow

Abrupt movement- infant defensive

tempo-space

Mother continues to hold infant in her body as mother mid tempo shakes the toy into the infants near space . The infant remains in the same position, making no gesture to the toy

Tempo-space

Mother takes infant by the hand- and with a fast and abrupt tempo mother raises infants arm and manipulates up and down. I increases in tension and holds her arm rigid.

Mother removes the toy and infant mid tempo raises and lowers her legs

Sudden erratic movement, the infant seemed startled

Tempo-tension flow

Mother brings the toy back on a linear pathway and mid tempo shakes the toy into the infant's near space. She stimulates the rattle against infant's nose, the infant turns her head slightly away from the toy. Mother quickly removes the toy and repeats shaking the rattle with a mid tempo. The infant remains in the same position. Mother suddenly lowers the toy to the table.

Space- tempo-directionality

Initial codes from Parental Embodied Mentalizing Coding Sheet:

Early Parent-Infant Interaction

(Note- original line numbers not inserted due to formatting of transcripts for appendices)

Observational Transcript	Initial Codes
Mother transitions infant into her chest, she sculpts her body within this <i>Sculpting within this</i> Pacing	<i>Mother initiates body contact</i>
Mother repeats- she abruptly lifts the infant from under the arm and manipulates the infant's arm to point to the camera / researcher. <i>The infant's body awkward as mother talks to the researcher</i> Pacing	<i>Sudden movements- infant did not signal</i> <i>Mother awareness of researcher</i>
With a mid tempo, mother bounces infant on her knee and sculpts her upper body over the infant <i>brief, gentle</i> tempo-tension flow	<i>Sudden unanticipated- does not follow from previous movement</i>
Mother holds infant's body and within this she lowers her head-mother increases the tempo as she bounces the infant and leans closer into the infants kinesphere. The infant increases in tension flow and her body tightens- mother turns her body and directs to the researcher Pacing-tension flow	<i>Mother bringing whole body closer- intrusive for infant?</i> <i>Infant defensive- rigid body posture</i>
Mother extends and reaches for a rattle. With a fast pace she directs this across the linear pathway to infant. The mother holds the rattle close into infant's face- -The infant extends out with her arms and pushes	<i>Out of the blue- mother trying to engage infant, Fast and sudden gestures</i>

<p>against the toy- her body stiffens and becomes rigid, her arms closed across her body- her body shrinks and increases in tension flow <i>Abrupt movement- infant defensive</i> tempo-space</p>	<p><i>Infant defensive- mother large movements- infant smaller</i></p>
<p>Mother continues to hold infant in her body as mother mid tempo shakes the toy into the infants near space . The infant remains in the same position, making no gesture to the toy Tempo-space</p>	<p><i>Mother dominant with the use of the toy</i></p> <p><i>Infant low clarity of signals</i></p>
<p>Mother takes infant by the hand- and with a fast and abrupt tempo mother raises infants arm and manipulates up and down. I increases in tension and holds her arm rigid. Mother removes the toy and infant mid tempo raises and lowers her legs <i>Sudden erratic movement, the infant seemed startled</i> Tempo-tension flow</p>	<p><i>Mother insistent Dominant as mother moves infants body</i></p> <p><i>Infant did not anticipated the interaction</i></p>
<p>Mother brings the toy back on a linear pathway and mid tempo shakes the toy into the infant's near space. She stimulates the rattle against infant's nose, The infant turns her head slightly away from the toy. Mother quickly removes the toy and repeats shaking the rattle with a mid tempo. The infant remains in the same position. Mother suddenly lowers the toy to the table. Space- tempo-directionality</p>	<p><i>Mother repeats and intensifies</i></p> <p><i>Body contact (through the toy)</i></p> <p><i>Mother fast tempo / abrupt</i></p> <p><i>Infant limited signals</i></p>

Stage 2: Thematic Maps from Parent Development Interview Initial Codes

Map Title and Initial codes	Line number	Map Title and Initial codes	Line number
Social baby	16, 24	Infants facial and body gestures	
Held by others	55	Clear facial expressions (infer mental states)	24, 338, 678, 685,
Inclusion of family network	102, 536	Smiling	57, 126, 793-3
Unsocial baby- does not smile to others	696	Mother responds to infants feedback (smiles)	129-136
Feedback brings joy	231	Infants body goes rigid , tense	150, 279
Feedback brings pain	101-105, 108-112	Infant shakes head (to signal no)	631
Personality develops	10	Infant signals with body (reaches)	677, 702
Smiles at mother	697		
Infant unsocial	754	Infant engaging with the world	
Happy to be out and meeting people	1093	Infant turns to environment	46
		Responds to light	53-58, 44-48
Social environment			
Contacted friends	23, 288	Infant dysregulated	
Guidance from support network	268	Cry self into state	67, 726-730
Mother isolated	311, 320	No soothing	68
Want infant to develop relationships	474	Dysregulated	70, 94, 147 , 346-355
Infants moods affects mothers mood	1		
Infant angry- mother angry	928		

Map Title and Initial codes	Line number	Map Title and Initial codes	Line number
Mother feeling helplessness		Mother's own affect regulation (coping)	
Mother feels helpless	71, 94, 157, 183, 202, 270	Trying to be calm	150
Less confident in herself / more nervous	256	Had to walk out of the room	156, 270, 501
Mother needs space	157, 270	Repeating statements / talks to herself	203, 319, 865
Helpless in her own childhood	423	Stand and breathe	270
Struggling	738	Seek support from friends	288, 574
Express need for support	906	To have routines and structure regulates emotions	474, 777-778
Worried mother would leave when she was a child	970	Mother needed space	542
Desperate / helpless to show her mother love	974-980	Mother can cope- remains calm	771-773
		Try to put stress aside	863
		Not talking- just carrying on	888, 909
Mother dysregulation		Attempts to protect infant and keep out of his awareness	895
Anxious	71, 342, 272, 277	Walking around the room- put space	934
Shouted at infant	284	Keep emotions bottle up	1065
Crying all the time	294	Tries not to express anger	1065
Shout in ear	354	Not hiding emotions	870
Frightened in own childhood	423		
Mother has violent rages / uncontained hostile	501	Co-regulation / dysregulation	
Her emotions can be unleashed	502	Malicious cycle	279
Not giving infant feedback	945	Sharing moments (laughter)	694
		Both enjoying	709
		Would like infant to feel able to be open with emotion	1055

Map Title and Initial codes	Line number	Map Title and Initial codes	Line number
Mothers mood affects infant	175,	Affect regulation	
Mother calm- infant calm	211	Soothing	35-37, 214,
Impact of mental health	174, 450	Exciting	48
Damaged by mothers depression	250	Adjusting routines	214
Sadness will affect baby	251	Physical contact / dancing	45, 23
Infant sense mothers anger	277	Holding	55
Quiet mother- quiet infant	750-755	Sensitive holding	205 , 716
Infant has a mind / aware of mother	96, 296, 5	Communicating with infant / singing	47, 346
		Bend down really low (adjusting body)	351
Infants feelings not elaborated		Can be hard to understand infant – but she does try	926
Baby does not have many feelings	11, 326-332	Put space between them	939
		Not easy to know how to comfort	928
Mother responds to infant cues	675-679	Tries to communicate her emotions	1070
Infant directed (indicated) -mother responded	702	Mother has the capacity to cope	222
Protests- mother responds (positive)	919		
Wants to be playful	468	Synchronised interaction	
Both pointing	705-709	Quick to know what one another wants	661-665
Gentle holding	716		
Cold and direct handling	944	Infant responds to mother	682
Infant sustained engagement	606, 617-626	Sharing moments	694-718
		Infant responds to mothers cues	628--635
Feelings of persecution		Mothers representation of self	
Infant aiming it at mother	154	Wants to be needed / valued	475
Infant does not want mother	153	Infant intentionally winding mother up	739

Map Title and Initial codes	Line number	Map Title and Initial codes	Line number
Infant withdrawn when around mother	177	Feels guilty about choices	797
Feeling persecuted by others	192	Projections- infant inherited fathers problems	813
Overwhelmed by guilt	242	Prejudices from others	853
Damaged by her	250	Feeling guilty	879
Infant avoided looking at her	297	Responsible for 'having him' and mixed up childhood	883
Ignored by her parent	440	Identification with mother	1001
Mother cannot provide everything	475	Mum feels valued	63
Guilty that infant had to go for tests	522	Mum feels dismissed	177, 104
Infant looked reproachful	550	Mother feels rejected	104 ,
Mother sees herself as bad	562	Mother feels persecuted / reproached	108
Infant does not smile at mother very often (to others)	696	Mother does not feel good enough / failure	109
Not feeling good enough- or protecting	899	Infant does not look to mother	126
Father was persecuting	1035	Mother minimising her capacity	675
Reproached	108	Mother has the capacity to cope	222
How the infant sees the mother		Worry about mental health	
Reproaching	108	Concern over mental health	252, 573
Aiming it at mother	154	Mother detached	321
Infant avoids / withdraws from mother	175		
Bad mother	562		
Abandoning mother	551		
Mother feels special	697		
Baby smiles to mother			

Map Title and Initial codes	Line number	Map Title and Initial codes	Line number
How the mother sees the infant		Aggression and hostility	
Baby undemanding	629	Overwhelmed by anger	112
Gentle baby	639	Feels angry	342
Infant is demanding (fussy over food)	642	Mother's upbringing	393, 429-434
Mothers feelings towards infant	524	Shouted at infant	726
Reproach	111	Infant screaming	729
Angry	112	Trying hard	183, 150, 202-206 , 737
Sad	101		
Not a clear personality	11		
Sad	101	Nightly struggle	305
Placid	17	Overcompensating from guilt	892
Sunny (bright)	174	Trying to give a different experience	1010
Withdrawn	177	Mother angry towards infant	942, 272
Doesn't like noises normal children like	753	Infant fighting against mother	152, 272,
		Both are angry	108-112
Slower than other infants (babies?,)	828, 835		
Infant coping		Handling	
Infant adapts to mother	296	Sensitive communication	204, 215,
		Not much commination- both pointing (gentle)	707
Well behaved and good	600, 629	Placing firmly (more abrupt/ cold)	944
Infant is undemanding	607		
Infant responds to mothers cues	628--635	Infant temperament	
		Infant under aroused? Too well behaved	635
Separation		Thoughtful and careful play	635
Infant taken away- mother helpless	511-528	Infant rigid and routine	615-635
Scared that her mother would leave during childhood	970	Fussy eater	650
Hard to relax, felt a pressure to get things done	1083		

Map Title and Initial codes	Line number	Map Title and Initial codes	Line number
Triangulation		Past figures	
No contact with infants father	801	Difficulties in mother's upbringing	250, 252, 391, 392, 393-445, 451, 976, 994
Dyadic couple	800, 810		
Mother- single parent dyadic-	914	Repetition of the past	403, 415, 439
Attachment signals		Breaks patterns of the past	504, 1001, 1051
Infant seeking mother	609	Others minds are dangerous	394
Come up for cuddles	611	Unstable family	1001
Impinging environment		Mother coping	
Feeling overwhelmed	895	Difficulty thinking about painful aspects	235-237, 458, 675
Court case/ mother preoccupied	850-850	Mother minimising her capacity	
Single parent	855	Mother has the capacity to cope	222
Problems having an affect on infant	1020	Elaboration	
		Mother aware of repetitions	1015-1024
		Expansion of impact of parenting	1007-1035
Integration			
Talking about biological father	988-990	Affective tone	
Can think about positive aspects of father	1050	Cold	941
Not hiding emotions as well as she thought	870		
Things are transient (developmental stage)	727	Detached	
Relationships change	92	Not feel bonded	177
		Detached- (the child)	491, 450, 504,

Thematic Maps from Parental Embodied Mentalizing Initial Codes

Map Title and Initial codes	Line number	Map Title and Initial codes	Line number
		Infant self regulating	
Regulating			
Oral- Finger in mouth	1	Hand sucking	91
Sucking onto hand	91	Dysregulation	88
Mother lends her body /	54	Mother body rigid- infant	53
bouncing infant on her knee		body rigid	
Gentle stroking infant's foot	145	Mother introduces a toy- infant withdraws	98-99
		Shielding against mother	106
		Shielding against the toy	136
		/ resisting	
Body handling		Infant brings his hand to his mouth	137
Gentle rocking	2, 11	Varied use of tempo within interaction	202-222
Gentle holding	1-15	Mother attempts to expand infant	89
Smooth and gentle handling / transition	6, 20-23		
Gentle transition	89		
Smoothly and gently offers toy	154		
Affection (kisses)	6		
		Anticipation	
		Mother clear signals	37
		Infant clear signals	179, 225-233
Body support		Withdrawal	
Supporting body	43 , 86, 89	Infant withdraws	15, 26, 84
Infant's body seems awkward	54	Mother attempts to connect-infant withdraws	69
Mother lends her body /	54	Infant shrinks	1010
bouncing infant on her knee			
Infant's head slumped	58	Infant brings his hands up into his body and turns his head away	103
		Infant explores toys independently	280-82
		Mothers bodies tightens	189
		Mother withdraws / rigid- Resting head on hand	198, 231

Map Title and Initial codes	Line number	Map Title and Initial codes	Line number
Authenticity		Mother dominant	
Mould her body with infant	11, 37,	Shaking infants hand	20
Sculpting and non intrusive	45		
Sensitivity		Mismatch	
Gentle stroking	15, 26, 141	Mother fast tempo-infant slow tempo	
Smooth and slow pacing within interactions	173	Mother attempts to expand infant-infant withdraws	89-91
Infant rigid- mother slowly tries to engage playfully	217-222	Infant tentative reach out- then retracts, mother continues	102-105,
Smoothness throughout the interaction	225-234	Mother increases speed as infant directs away	111
Infant holding onto mother hand	30	Intense and prolonged	207
		Infant expands and mother intrudes	135
Third position		Ruptures	
Mother turns infant towards the camera	31	Infant extends away- mother	55
Mother introduces a toy (when infant dysregulated)	98		
		Affective tone	
Adjustments /repairs		Flat and rigid	80
Mother shifts her body with infant	59	Mother gesturing	148-151
Mother sculpts her body and gentle rocks infant	73		
I yawns- mother reduces tempo	74	Referencing	
Mother terminates intrusions and gentle strokes infants foot	143	Mother sculpts and looks to infant	187
Infant higher tempo- mother increases her tempo	273-279		

Map Title and Initial codes	Line number	Map Title and Initial codes	Line number
Playfulness		Watch and wait	
Mother initiates an engagement	173-183	Mother waits for infant	155,
Mother symbolic play	195		
Infant shakes toy- tempo increases	267		
Infant unclear signals		Synchronised (mostly with the use of toys)	
Tentative extension to the toy	99, 104, 156, 208	Infant tentative extension to the toy- mother brings the toy closer	100
Infant directing- but not reaching for the toys	166-169	Turn taking	161
		Mother mirrors infants gestures	176
Infant initiates		Infant makes slight gesture-mother quick to respond	180
Infant active	152	Mother passes toy- infant receives	191
Infant explores the toy	167	Matched pacing /tempo	225-234
Infant offers the toy to mother- as part of the interaction	180	Mother adjusts her body with infant (moulding)	241
Infant directs to the toy box- mother shares this	186, 231	Infant reaches for toy- mother follows, moulds her body	284
infant moves into the shared space	261	Mother offers a toy- smooth and gentle	154
Infant holds onto mothers	30		
Intrusive		Infant independent	
Continues to present the toy into infant space	102	Infant lifts himself from the floor	166
Stimulates the toy against infant face	135	Higher clarity- exploring the toy	250
		Infant reaches to the toy and brings this into his body	275-280

Map Title and Initial codes	Line number	Map Title and Initial codes	Line number
Mother provides space		Mixed messages	
Creates space	159	Mother withdraws /	198, 231,
Mother-non intrusive	174-255	rigid? Resting head on hand	255
		Turn taking	
Responding to infant cues			
Infant makes slight gesture- mother quick to respond	180, 208	Mother provides the toy- infant takes- mother waits	152-162
Infant directs to another toy- mother observes, remains present	230	Turn taking with the stacking toys	17-182
		Mother passing infant toys- I takes the toys	188
Facilitating environment		Infants extends for toy- mother extends for toy	250-51
Offering toy but not dominant	160		
Engaging but providing space	173-182	Repetition	
Mother facilitates infant's exploration	239-246	Mother shaking infant's hand	92
		Mother repeats- shaking the toy and bringing in another toy	110-112
		Infant repetitively places toys down	139-145
		Sustained / continuity	
		Gentle rocking	31
		Sustains gentle bouncing	75
		Sustained engagement with the stacking toys	173-182

Stage 3: Thematic Map for All Dyads Parental Embodied Mentalizing and Parent Development Interview Data

Infant coping

Infant dysregulation
 Infant self regulation
 Infant coping / adjusting to mother
 Infant withdrawal

Mother coping

Detaches
 Mother tries to regulate
 Mother tries to connect

Co regulation and dysregulation

Ruptures
 Mismatch
 Infants mood affects mothers
 Mothers mood affects infant

Affective tone

Cold
 Trying to connect

Mental images of one another

Mother representation of the self
 Mother identifying with infant
 Mother and infant separate beings
 Mother's representation of the infant
 Infant temperament

The past

Family / upbringing
 Trying to break cycle
 Repetition

Triangulation

Triangulation – father – support network

Shifting Environment

Impinging
 Facilitating

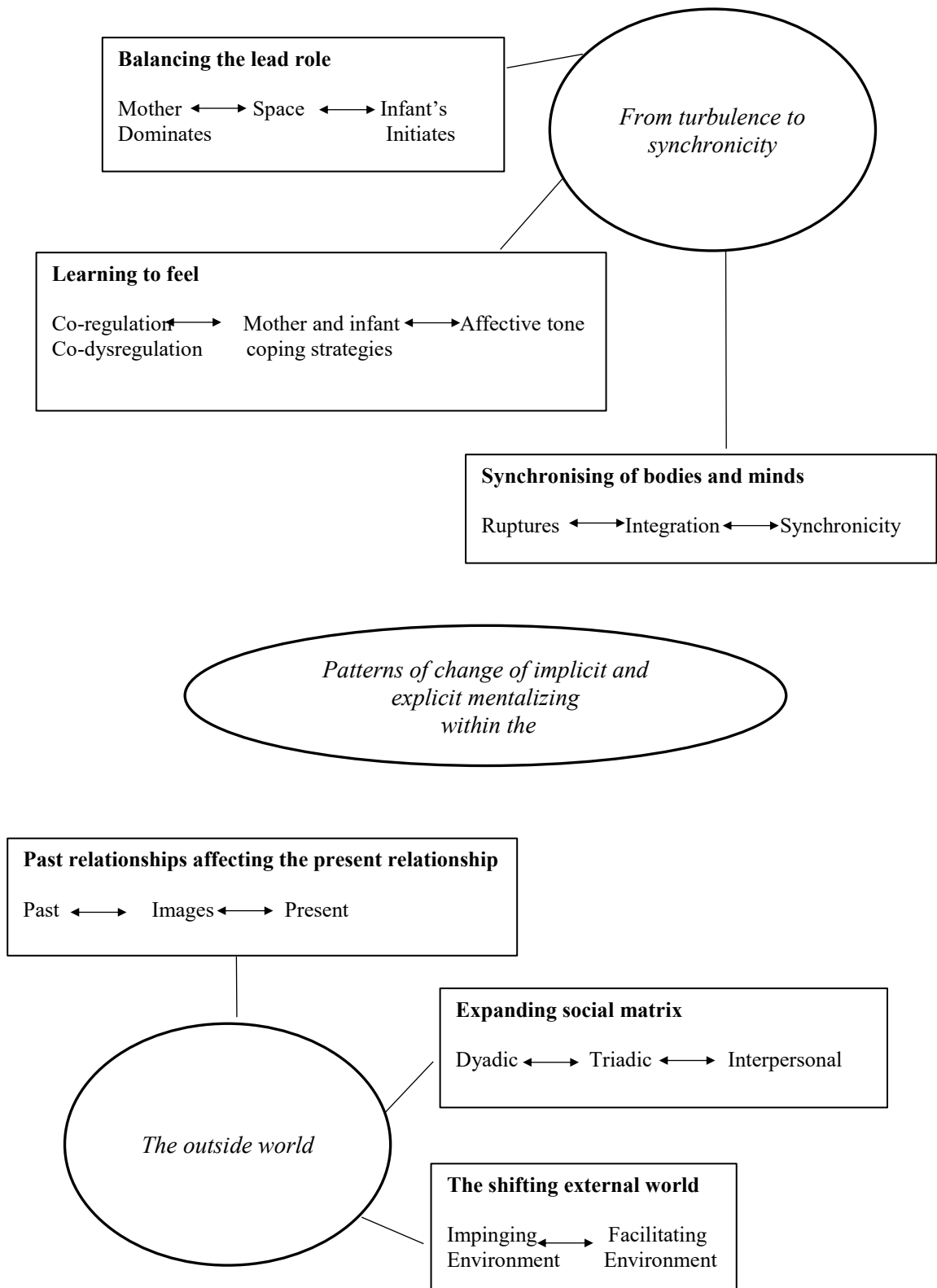
Separation

Mother provides the infant with space
 Infant has different inner processes to mother

Mother feelings

Helplessness
 Hostility

Stage 4: Final Thematic Map



Appendix K



Mentalizing the Body: Parental Embodied Mentalizing in Research and Clinical Practice

This is to certify that

Rose Spencer

successfully completed the reliability test relating to the Mentalizing the Body: Parental Embodied Mentalizing in Research and Clinical Practice (PEM) training course at the Anna Freud National Centre for Children and Families.

This certificate authorises Rose Spencer to use PEM for clinical and research purposes.
08/03/2010

Signed:

.....
Dana Shai
Course Leader

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Reflective Functioning of the Parent Development Interview: Reliability Test

To Whom It May Concern:

This is to certify that

Rose Spencer Successfully completed the Reliability Test in July 2016.

This certificate authorises Rose Spencer to utilize the Reflective Functioning Scale for Clinical and Research Purposes. It also allows publication and presentation of research data obtained using the Reflective Functioning Scale.

Signed

..... **Michelle Sled Course Leader**

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Principles and Practice of Psychoanalytic Parent-Infant Psychotherapy

To Whom It May Concern

This is to certify that

Rose Spencer

attended the Principles and Practice of Psychoanalytic Parent-Infant Psychotherapy workshop held at Anna Freud Centre, 6th- 9th January 2015.

Signed:

A handwritten signature in black ink, appearing to read "Tessa Baradon".

Tessa Baradon
Course Leader